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HYPERTROPHY OF THE THYMUS GLAND, WITH REPORT OF CASES*

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Recently there has been much written and published about the thymus gland, its function, size and relationship to certain symptoms frequently encountered in infants. It is not the purpose of this paper to present any new scientific data but rather to discuss briefly some of the cases showing these symptoms, and also to put before you X-ray pictures of certain cases before and after treatment.

Discussion as to the function of the thymus and the part it plays in cases of sudden death has broken out periodically over a long period of time. However, we are still largely in the dark as to whether this gland is in reality a gland of internal secretion or is concerned chiefly with the production of lymphocytes. Whether it has to do specifically with growth and development or to the production of nucleo-proteins has not been determined. Evidence has been produced which points to each of these. Certain it is, that some cases of sudden death are accompanied by a hypertrophy of the thymus gland. The fact that sudden death by accident or poisoning may also produce an enlarged thymus does not warrant us in supposing that the gland itself may not at times be the cause.

A large number of infants and children die each year after a few whiffs of anesthetic, a large proportion of these deaths are presumably caused by malfunction or hypertrophy of the thymus. Indeed, this is so frequent, that many hospitals and surgeons insist upon a picture of the thymus before undertaking any surgical procedure requiring an anesthetic and to those found to have an enlarged gland, radio-therapy is administered.

The anatomy of the thymus varies widely; it may be situated high up in the mediastinum or low down over the heart. It is surrounded by large vessels, nerves, lymphoid tissue and so forth. It may be broad and flat or long and thick; at times the thymus shadow may blend in with the cardiac shadow.

If hypertrophied in its antero-posterior diameter the shadow may not appear broadened, but the gland may be producing symptoms through pressure on the trachea or the recurrent laryngeal nerve. This pressure on the trachea has been amply demonstrated through the use of the tracheascope, and is readily understood when it is realized that in the infant the superior thoracic opening is only two inches in diameter. The X-ray therefore does not always show us definitely hypertrophy of the thymus.

There has been in the past, and is at the present, much discussion as to the size of a normal thymus. We know that it does enlarge from birth up to two years. Some contend that from two years on it begins to involute, others that it progresses in size up to puberty. It is generally considered that the average size at birth is from seven to ten grams. Boyd in a recent article shows that the size of the thymus varies with the state of nutrition of the infant and that the average weight in the new-born, well-nourished infant is from twelve to fourteen grams—slightly higher than has heretofore been thought. Certainly a thymus weighing from twenty to thirty grams must be considered hyperplastic.

Various infections and conditions upsetting the nutrition do cause a decided diminution in the size of the thymus.

The symptoms generally ascribed to hypertrophy of the thymus are syncope, cyanosis, stridor, breath-holding, convulsions, asthma, cough and vomiting. It would seem that any of these symptoms may at times be caused by this hypertrophy and may be relieved by proper treatment.

I now propose to show X-ray pictures of subjects showing some of these symptoms:

CASE 1.—Baby B. Although the most usual symptom mentioned by various authorities is stridor, it has been my experience that those showing cyanosis, dyspnea and syncophy are encountered more frequently. This particular case has the distinction of being the second case in one family. I saw the first child ten minutes before death from a typical status lymphaticus.

*Read before the 55th Annual Meeting of the Florida Medical Association, Tampa, April 3, 4, 1928.

This child was a normal delivery progressing favorably in every way up until the fifth day. I was asked to examine the infant on the fourth day as a matter of routine, the parents fearing another fatality. At that time the child was apparently perfectly normal in every respect. An X-ray was not taken as I did not recall the parents and consequently did not connect this infant with the one who had died. On the fifth day I received a rush call from the hospital and on my arrival found the patient struggling for breath, very cyanotic and almost pulseless. The elder child came to my mind immediately and the infant was rushed to the X-ray room.

Radio-therapy was administered immediately, the child made an uneventful recovery in about four hours and has shown no symptoms since that time. Several treatments were given at weekly intervals. Eight months later a picture was taken which still shows a broad thymus shadow. However, inasmuch as no symptoms had been apparent only two more treatments were given and no further trouble has developed.

CASE 2.—Baby W. Although in the past much was written about thymic asthma, this is the only case in my experience which I consider to be such. This infant was referred for asthma and upon examination showed a well-nourished infant with no abnormalities with the exception of an expiratory wheeze. There was no history of any colds, eczema or bronchitis. The blood did not show the characteristic eosiniphilia. This picture shows a definitely broadened thymic shadow. One treatment gave relief from the asthma and after weekly treatments for a period of five weeks this picture was taken, which shows a decided lessening in the size of the gland.

CASE 3.—Baby D. In this infant stridor amounting almost to laryngospasm was the predominant symptom. This infant was a premature child first seen when six weeks old, at which time she weighed less than four pounds. She was cyanotic at frequent intervals which oftentimes was followed by syncope and collapse. Digestive disturbances with the formation of intestinal gas often precipitated the attacks. This picture shows a definitely enlarged thymus blending below with the heart shadow. At this time we did not fully understand the technique of the radio-therapy and although frequent treatments were given, improvement was not noted. In the effort to obtain results a full skin dose was administered which was followed by immediate relief. Five months later this picture was taken which shows a decided reduction in the comparative size of the gland.

CASE 4.—Baby H. In this case vomiting was the predominant symptom and although there is a question as to whether the hypertrophy of the thymus was responsible for it, it was certainly coincident. This picture was taken when the baby was six days old at which time vomiting was so severe that a pyloric stenosis was strongly suspected. The picture shows a definitely enlarged thymus almost filling the superior outlet of the thoracic cavity. Weekly treatments were instituted until six were given. Vomiting ceased about the tenth day and the baby has progressed normally since that time. This picture was taken three months later and while it still shows an enlargement it is so much reduced in comparison with the infant's size that further treatments were not thought necessary.

CASE 5.—Baby F. In this infant attacks of syncope and collapse were what alarmed the parents and caused them to seek relief. The infant was six weeks old, perfectly normal at birth and had shown a normal gain and development. It had suffered two collapses. Those collapses are indeed terrifying as with no warning the infant becomes limp, colorless, pulseless and apparently lifeless. It is only infrequently that the physician sees the patient in this state of collapse as by the time he arrives the child has usually recovered and is apparently normal. The picture shows an unusually large thymus of peculiar shape, almost filling the right superior opening of the thoracic cavity. Weekly treatments were instituted for a period of six weeks and with complete relief of all symptoms. This picture shows the improvement made after three months.

CONCLUSIONS.

We have on record a number of other cases showing practically the same symptoms and results, but I have selected these as typical cases showing the symptoms commonly ascribed to hypertrophy of the thymus gland. I am well aware that Wasson of Denver in a recent article makes the statement that in his experience, which is probably the greatest of any authority now investigating the thymus, stridor is not due to hypertrophy of this gland and that Helmholz in discussing Dr. Wasson's paper bears him out. They are of the opinion that in most cases it is the accumulation of mucus somewhere in the

respiratory tract that is the cause of this symptom. On the other hand well established authorities have accepted for years and still believe that stridor is the most common sign of this condition. As I stated above, it has not in my experience been the most frequent symptom displayed, but still it has occurred in a sufficient number of cases coincidentally with an hypertrophy of the thymus to convince one that it can at times be caused by the enlargement. It seems to me that practically all the symptoms commonly noted as being associated with hypertrophy of the thymus can be attributed to pressure. This pressure may be exerted on the trachea, esophagus, recurrent laryngeal nerve on the vagus. This would seem to be borne out by the fact that the symptoms are frequently precipitated by the accumulation of intestinal gas with its increased intra-abdominal tension and secondarily increased intrathoracic tension. In the cases shown you we have been unable to demonstrate any other cause for the symptom complex presented and from this fact I deduce that hypertrophy of the thymus gland can and does produce conditions demanding our attention if we are to save the lives of a certain number of infants who die yearly as a result of this maldevelopment.

Routine X-ray examination of infants at birth, as well as a routine preoperative procedure in young children will show an astonishing number of enlarged thymus glands. Radio-therapy properly employed is harmless and will certainly save a number of lives each year that are now being uselessly sacrificed.

PART II.

Treatment of the Thymus Gland in Infants.

J. A. Pines, M.D., Orlando.

My part of this paper will deal more particularly with the technique used in the treatment of these thymus cases, as Dr. Osincup has already given you the clinical picture and presented several cases, which have been of particular interest to us and which have responded promptly to X-ray treatments.

It must be remembered that an infant's skin is very delicate and great care must be taken not to produce a burn; it is also important to remember the selective action of X-rays on all gland and lymphoid tissue. While the thymus gland, as we know, is located in the superior mediastinal area and the normal sized gland weighs from about seven to fourteen grams in the new-born infant and is situated just above the heart shadow, we oftentimes find in these hypertrophied cases the shadow of the thymus extending downward and in some cases covering most of the heart shadow.

Special care must be taken to protect the suprarenal glands, pancreas and spleen, below the diaphragm, and the thyroid and parithyroid glands above the thymus, as well as the delicate skin of the surrounding area.

We have devised a lead box which we fasten to the frame below the Coolidge tube. In the bottom of this box is an oval window 8x14 c.m. This is large enough to cover the chest area of an infant one year old. We have other lead plates with windows 6x10 c.m. and 4x7 c.m., respectively, which we can put in place for smaller infants.

We place the infant on a pillow on the treatment table and pin its blanket tightly about its arms to keep them out of the field being treated. The mother or nurse sits by the child to hold it from squirming about. When everthing is ready we lower this lead box over the child's chest just so it does not touch. This is much better than trying to cover the child with heavy lead foil, which is hard to keep in place and properly protect the child during treatment.

We use 130 KV or a nine-inch spark gap, five milliamperes of current, four m.m. of AL filter. Our distance is twenty inches from the target to the floor of the lead box and as we lower this box so it nearly touches the child, we have a twenty-inch target skin distance.

It requires eight minutes with these factors to give one skin unit. Two and one-half skin units is an erythema dose which is the quantity of roentgen ray necessary to produce an erythema of the skin in from ten to fourteen days after exposure.

This is what we want to avoid, so we give one-half skin unit at each treatment or four minutes with the above factors. This dose we give once each week for five weeks. As roentgen rays are somewhat accumulative in their action, we cannot give further treatments until at least a month has elapsed. We have already given twenty minutes or an erythema dose if it had all been given at one time.

The child is kept under observation during the next thirty days, but no roentgen ray treatment

should be given. We have not found it necessary to repeat the course of treatments or even to give five treatments except in one or two cases. Most of the cases have been given three treatments. At the end of this time, they have been free from symptoms. After a rest of thirty days, we take another radiograph of the child's chest and as Dr. Osincup has showed you a few of these cases, you will note the diminished size of the mediastinal shadow after the roentgen ray treatments have been given.

We are well pleased with the results we have obtained with the use of the X-ray in the treatment of these thymus cases and a host of grateful parents are liberal in their praise of what it has done for their children. In many of these cases, this has been our only reward, as the majority of them have been undernourished infants from the homes of the very poor. We feel amply repaid, however, in that we have been able to render this service to humanity and to advance this branch of medical science.

DISCUSSION

Dr. J. D. Love, Jacksonville:

This paper is delightfully refreshing in its absolute freedom from dogmatism. The author makes no unqualified remark concerning this rather mysterious malady that he might be called upon to prove. It is unfortunate that we know so little concerning the thymus. No one knows what constitutes an enlargement of the thymus nor what constitutes a normal thymus, and no one knows what is the physiology of the thymus. No one has advanced a theory that has been freely accepted and that has withstood the criticism of competent observers.

The X-ray has its value but is of comparatively little use as a diagnostic measure except as being contributory in verifying a diagnosis of thymic enlargement.

Concerning stridor, I would say if it is a manifestation of a pressure on the trachea it is unbelievable that the stridor should be only inspiratory and not expiratory as well. I am inclined to believe that the thymus as a cause of disease is largely overestimated. I believe if we were not thinking so much that the disorder under investigation was caused by this disturbance we would quite frequently find an explanation in some comparatively simple causes such as laryngeal disturbance or slight edema of the trachea.

One condition that was mentioned, holding the breath, I hardly believe is a sign or symptom of thymic trouble. The child recovers from it too quickly to attribute it to pressure on the trachea. I rather believe this holding of the breath is due to an imbalance of that part of the autonomic nervous system that presides over the function of the larynx, and particularly the vocal cords.

Concerning "Case One" recorded by Dr. Osincup I would be inclined to doubt that all the symptoms were caused by pressure of an enlarged thymus. Dr. Osincup states that the child was given X-ray treatment and made an uninterrupted recovery in four hours. Now, we know that enlargement of the thymus is a true hyperplasia and it is unbelievable that an X-ray treatment or any other procedure could cause such a reduction in the size of the thymus as to relieve the case of all symptoms within four hours.

The outstanding feature of the paper is concerning therapy. In this there is virtual agreement. The results following X-ray treatment are simply wonderful in those cases where it is properly administered and in well established cases.

Dr. D. D. Martin, Tampa:

Dr. Osincup has presented a very interesting and instructive paper on a widely discussed subject, one upon which we are daily called for advice and relief. I must admit that my mind is open on the subject of thymus pathology. There are many angles to the pathology that are puzzling to me. In the case mentioned by Dr. Osincup where there was sudden recovery after the first X-ray therapy, I agree with Dr. Love. As a rule after the first and often after subsequent treatment the symptoms might be exaggerated. It is claimed that we have a temporary hyperemia and enlargement of the gland. The case mentioned I would regard as doubtful with such rapid marked changes. At the present time X-ray seems to be our most beneficial form of treatment. Of course, the dosage and methods of administration are very important factors. Dr. Pines has devised a very ingenious method of treatment with a full therapeutic dose.

Dr. Osincup has presented a carefully prepared, interesting and instructive paper which we all appreciate.

Dr. G. H. Edwards, Orlando:

I have possibly one hundred and fifty pictures of thyroids in infants. I have both wide ones with a thin shadow and narrow ones with a

heavy shadow and vice versa, and I can state there has been no more symptoms of thyroid disturbance from the wide ones than from the narrow ones. Many of the wide shadows have had no thymus symptoms whatsoever. I mentioned this for this reason: I happened to run in on the hospital technician when a picture was being taken some time ago. The child was held by the nurse with her arms back like this; another held the feet of a child, and the child had taken a deep breath and was ready to yell when the picture was taken. It had possibly been in this position ten seconds before taking the picture. It occurred to me that something due to the exertion of the child might have increased the size of shadow in that child. We can't depend on the shadow alone in making a diagnosis.

It occurred to me that after taking these pictures I have been working a hardship on and creating neuresthenic conditions in many mothers. Inadvertently I may have let a mother see the picture and she for the next two or three months, if there are any suggestive symptoms at all, jumps up and runs for the doctor every time the baby cries; it has ruined her absolutely for the time being, she doesn't furnish good milk on account of worry and loss of rest; so I think I have done harm to a certain extent by discussing this in some instances.

When I was in school we knew nothing about thymus disturbance whatsoever; today we hear a great deal about it, but how much we know and how much the size of the thymus influences the condition, I am not sure in my own mind. The more pictures we take the more we will find out about the diseases of children, but these pictures are only shadows, they may be very vague, and many of us endow them with tremendous potentialities regarding the health of the child. We might even construct a disease to fit the shadow.

Dr. J. A. Beals, Jacksonville:

It is a great pleasure to listen to Dr. Osincup's paper and the discussion that has followed.

I want to say one word from the standpoint of an X-ray man who sees and treats these cases. My viewpoint is often considered by those doing X-ray work as reactionary. It has never seemed to me that the degree of enlargement of the thymus shadow has any relation whatsoever to the severity of symptoms which are grouped as under the heading of thymic syndrome. These patients should be treated when that syndrome is definitely present; but I would like to say again, minimize the importance of the size of the thymus shadow.

Dr. Ross, Jacksonville:

I am very much interested in this subject. I see a lot of these cases just as Dr. Osincup has pictured them. We know practically nothing about the thymus; we have theories; we know nothing except the one thing that these symptoms do not arise among the poor alone but in well-fed, well-nourished infants; that they are relieved by X-ray treatment; that a whole line of peculiar symptoms referable to the chest, and the mouth and throat are found, and are relieved by X-ray. We can't say positively that the symptoms are caused by the thymus; we know the single end-result is that we get good results. At the present time when I see these peculiar symptoms I practically always have my patient X-rayed.

Dr. Pines (closing):

In regard to what Dr. Edwards and Dr. Beals said about taking the picture of a child and getting a broad shadow, we try to make the picture in the fraction of a second and avoid a lot of that distortion. My method is to get the child as quiet as possible, allow it to relax and stop crying and then I take the picture in one twentieth of a second, with 100 milliamperes of current. I think that will avoid a whole lot of that distortion of the chest.

INSTRUMENTATION AND OPERATIVE TECHNIQUE WITH POSTOPERATIVE RESULTS OF THE ELECTRO-ENUCLEATING-TONSILLOTOME*

F. Peter Herman, M.D.,
West Palm Beach.

Introduction.

The assumption of a specific surgical procedure produces a biased reaction. In many instances a really worthwhile improvement in technique has been lost because of such an assumption.

"In a recent meeting of the Philadelphia Laryngological Society there was discussed, 'The Tonsil Problem of the Aged.' Following this discussion, 'sensational notoriety' is said to have been given to a method of removing tonsils by electro-coagulation or desiccation which was advocated by a member during the discussion.

*Read before the 55th Annual Meeting of the Florida Medical Association, Tampa, April 3, 4, 1928.

The Society passed a resolution stating that it does not officially endorse the method nor approve the publicity given the matter, and that it disclaims all responsibility for the opinions expressed in the discussion on removal of tonsils by this method."[1]

To the knowledge of the writer, this method of coagulation (without enucleation), has been before the profession, in an adverse position, for at least twenty years.

A high frequency current with the disbursing electrode at a distant point, is not a selector of tissue, and used in that fashion becomes a pure hit-and-miss (mostly miss) proposition, in most hands.

Bearing the above statements in mind I believe it essential to bring out the difference in the associated terms, before going on with the subject matter of this paper.

When one coagulates, he simply kills the tissue within undetermined limits, by raising the temperature at a given point, with a subsequent sloughing and scar formation.

When desiccation takes place, there is a burning at the immediate point of application, with a coagulation more distant. The two conditions are made possible by the application of a more or less current strength, the desiccation or coagulation, tending to be in the general direction of the distant disbursing electrode. The amount of sloughing is absolutely irrelevant as to tonsil or other underlying tissue, with the intermediate pain, of considerable duration, accompanied with a great amount of edema. Further, in the event of insufficient devitalization, there is a subsequent cicatrix overlying submerged tonsil tissue, with the inevitable systemic absorption. In the event of too great sloughing, there is a destruction of vital underlying structures, with the accompanying untoward results.

Dr. W. H. Taylor reports[2] the use of the high frequency current by way of the dissecting scissors. This method of use is far advanced over the coagulation method. However, the large, distant, disbursing electrode is used, thus directing the current into the sinus walls. With the insulated seizing forceps as used by the writer, for the latter current application, it becomes but a matter of preference of technique between it and the method herein described.

In the first work done by the writer, the large distant disbursing electrode, in conjunction with the insulated snare, was used.[3] Owing to the absolute inability to secure control of the current, a modification, tending to confine all current activity to the tissue being removed, was perfected, which, with results obtained, is later described.

For the present instrument, the word "electro-enucleating-tonsillotome" has been selected, electro to identify the method from other enucleating methods; enucleating, to indicate that the tonsil is actually removed at the time of the current application, and not simply burned and allowed to slough and fall out at will, to a greater or lesser extent.

It should always be uppermost in the mind of the surgeon, regardless of what part of the body he may be working on, that the time consumed in the operation is not so much for the mere cutting or removal of the organs, but rather for the control of hemorrhage. The strictly surgical work required for the removal of both tonsils can easily be done in a moment or two, but one needs to devote much more time to hemostasis if blood be present. He who slights this most important duty will pay in a few hours, or days, following, thus being brought forcibly to the realization that the so thought, simple tonsillectomy, has taken on an extremely major aspect.

INSTRUMENTATION.

There will be no attempt to cover the field of indications for the removal of tonsils in this paper (this subject having been treated upon, in a measure, in paper read before this society, last year.)[4] Remarks will be confined to the efficiency and use of electro-enucleation in the hands of the writer.

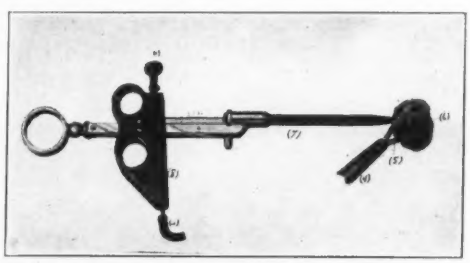

Figure 1.

The instrument is of the fenestrum type (Fig. 1), suitably insulated so as to allow the attachment of the two electrodes, the active to the snare wire; the disbursing to the seizing forceps. The latter is placed to the distal side

of the loop, thus confining the current to the tissue being removed. This arrangement makes possible the application of a desiccating current strength without harming the underlying tissues. (The current flow is away from the sinus, into the tissue being removed.)

THE CURRENT.

The current used is of an undamped high frequency type, the frequency being optional with the operator. The higher the frequency, the less the coagulation and the greater the cutting

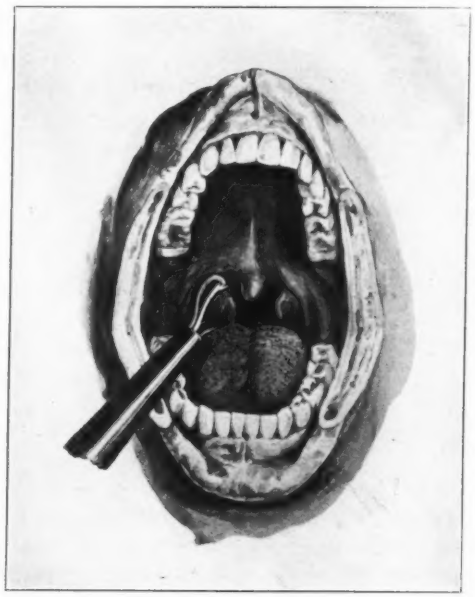

Figure 2.

property. The writer uses a frequency of about seven hundred and fifty thousand, which rate in a properly adapted electrome for this particular instrument, is a semi-coagulating-cutting current.

TECHNIQUE.

The primary technique, in so far as the engagement of the tonsil, is identical with any

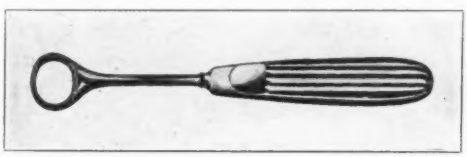

Figure 3.

other type of fenestrum instrument. After the snare has been drawn taut, the middle finger draws the seizing forceps finger grasp backward. This movement causes the forceps to grasp the tonsil and simultaneously makes a good electric connection (Fig. 2). The current is now applied by pressure on a foot switch. At the same time the carriage is drawn backward, causing the snare wire to follow the line of cleavage be-

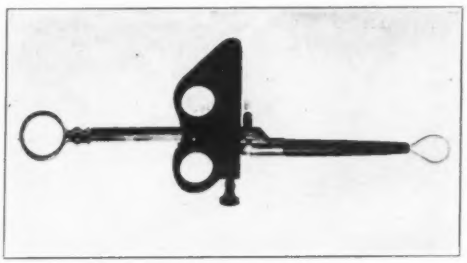

Figure 4.

tween the tunica-propria and the submucosa. The current is at the same time passing between the snare and the seizing forceps, producing a coagulating effect, with a resultant bloodless field.

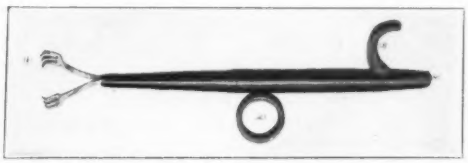

Figure 5.

There are those cases wherein the tonsil, due to its submerged, or fibrotic state, is not applicable to any direct instrumentation. For this type of condition there has been devised a unique

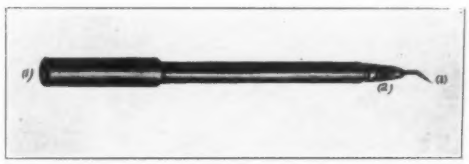

Figure 6.

instrument, by Dr. Arthur Nilsen, (Fig. 3), known as a dislocator. It consists of a thin metal loop, properly supported so as to enable one to put forth considerable applied pressure, thus breaking down the existing fibrous bands, as well as lifting the submerged tonsil from its bed. Having been thus dislodged, it is quite simple to re-engage in the electric-tonsillotome.

Notwithstanding this latter technique, there still remains (in the experience of the writer) about two per cent of all cases which are not

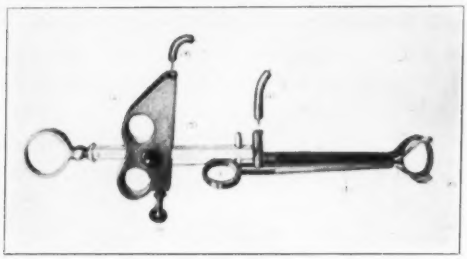

Figure 7.

applicable to any method of instrumentation. These are handled by interchanging the fenestral loop with an insulated tubular member (Fig. 4); a separate seizing forceps (Fig. 5); and the dissector (Fig. 6). With these instruments, the disbursing electrode being attached to the seizing forceps engaging the tonsil, the active electrode to the dissector, the usual technique of dissection may be carried out, followed by the free snare, to which the active electrode has been connected upon completion of the dissection. (Fig. 7).

ANESTHETICS.

The type of anesthetic to be used is optional. In a series of over five hundred cases, the majority have been done under a local anesthetic. Ether is used in the extremely nervous adults and all children. In the above number of cases done in private practice, there were no untoward results from the use of ether. If after complete anesthesia has been produced, the cone removed

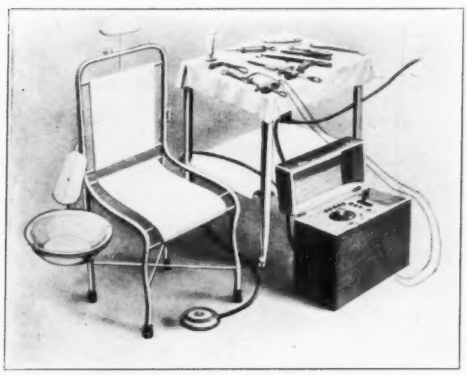

Figure 8.

to one side, the time elapsed between the preliminary preparation and current application is sufficient for the patient to have exhaled all nascent ether.

There is left a clean unobscured operative field (bloodless). The slight searing of the sinus destroys any remaining tonsil tissue, thus preventing regrowth.

Absence of blood prevents aspiration, with its ofttimes untoward results.

The sealing of the arteries, veins and lymph spaces prevents secondary systemic infections.

The electric stimulation of the underlying tissues is thought to promote a more rapid healing, with a resultant shortened convalescent period.

A favorable psychological impression is made upon the patient owing to the absence of blood.

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NONSURGICAL TREATMENT OF INFECTIONS OF THE BILIARY TRACT*

GEO. P. HAMNER, M.D.,
Tampa.

If allowed to run its natural course of weeks or months, as the case may be, the back pressure of any obstructed, or partially obstructed excretory system may produce extensive damage to the cells of the organ functioning through the system. Especially is this true of such complicated and delicately constructed organs as the liver and *pancreas*.

And such a condition indubitably sets the stage for the development of liver and pancreatic disease or dysfunction.

In my ten years' experience in dealing with congestive, infectious and obstructive diseases of the liver, gall-bladder and biliary passages from the viewpoint of especial interest and attention, it has been, of course, my observation that the more rapidly and efficiently the biliary system is opened up and thoroughly drained the more prompt and thorough will be the relief. In my hands this has been accomplished more promptly and satisfactorily with the duodenal tube, by what is commonly known as the Lyon-

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Meltzer nonsurgical gall-bladder drainage than any other form of treatment.

In refutation of the many attacks and harsh criticisms of this method of treating biliary diseases I merely wish to call attention to Meltzer's law of contrary innervation as applied by Lyon in this method, to dilate the ampulla of Vater and the common bile duct with a solution of sulphate of magnesia (usually of 33⅓% strength), and thus to cause the gall-bladder to empty more rapidly and completely than by the use of cholagogues and cathartics administered by the mouth.

It will be remembered that Meltzer clearly and conclusively demonstrated in animal experimentation his law of contrary innervation, and that Lyon was the first to avail himself of it and to apply the principles therapeutically.

I was immediately interested in Lyon's initial work along this line because at the time, I was engaged in testing out typhoid convalescents in the infectious wards of an army base hospital, for the purpose of locating carriers. Incidentally two carriers were found and sent to Walter Reed Hospital for cholecystectomy. But until the publication of Lyon's results of his first work I had not used the duodenal tube therapeutically.

Not only is it rational to assume that the ampulla of Vater is relaxed or dilated, but that a portion of the sulphate of magnesia solution does actually travel along the common duct itself, as beyond any doubt the tetra-iodo phenolphthalein and tetra-brom-phenolphthalein solutions used in the Graham-Cole method of cholecystography does enter the gall-bladder to the extent of completely filling it, even when administered by mouth. And if these salts can find their way past Oddi's sphinctre there is no reason why other salts even of lesser density should not, to some extent.

Bassler assumes that the function of the gall-bladder is only that of a buffer, or pressure valve to relieve distension and protect the pancreatic tissue, rather than that its primary function is that of a reservoir of bile for intestinal digestion.

In confirmation of this theory let us note that Rous and McMaster have demonstrated that the power of concentration of the gall-bladder is so great that in the normal range of function it can receive one quart of liver bile, and concentrate it down to a little over three ounces; thus preventing undue distension.

It is a well established fact that under surgical observation the deepest colored, heaviest bile is recovered from the gall-bladder itself, either normally by expressing its contents, or when opened. How otherwise account for the presence of from one to six ounces of this darker and more concentrated bile as coming from somewhere between the common duct sphincter and the secretory liver cells?

Lyon claims that when the gall-bladder is ablated the duct attempts to assume this function by dilating. He is substantiated in this by Dubose of Selma, Ala., who declares that in twenty per cent of gall-bladder cases in which a cholecystectomy had been previously done, at reoperation there was found an enormously dilated common duct, an attempt of nature to reform a gall-bladder, and this enormously dilated common duct was freqeuntly filled with stones or pus as in primary conditions of cholelithiasis or suppurative cholecystitis respectively.

Then to revert to the opening paragraph of this paper; if we have an obstruction or stasis in the biliary excretory system, regardless of the primary cause, there is damage, dysfunction and dysharmony in the entire system, both secretory and excretory; and it behooves us to restore this function as quickly as possible.

But, it is to be remembered that in the vast majority of cases of disease of the liver and its appendages there is no obstruction, nor even a definite stasis; and the commonest of these is chronic cholecystitis, either of a simple congestive and catarrhal type or a more serious infectious character, and almost invariably complicated by a resulting hepatitis, whether mild or severe.

Fortunately the duodenal drainage is equally effective in all cases, except, of course, in those of a strictly organic character in which there is an impacted stone in one of the ducts, or occlusion by torsion, adhesions external to the duct but closing it completely, or closure from pressure by some other organ. Of course under such circumstances no relief can be expected from the duodenal tube.

The method is safe and simple, and if a little care is exercised the disagreeable feature to the patient is negligible. The procedure is carried out under as nearly aseptic conditions as possible, and as soon as the tube enters the duodenum a specimen of bile is obtained in a sterile container; then about 75 or 100 c.c. of a 33⅓% solution of magnesium sulphate is run in through the tube and aspiration immediately begun. This

is usually followed by a copious flow of bile which soon becomes darker in color, and in the presence of disease frequently very dark to a black color with a viscid, molasses-like consistency. A second specimen is now retained, and a third specimen as the drainage is completed. This last, which is liver bile, is of a pale, yellow or lemon color and much thinner than the former specimens.

After all the bile is obtained and the glass connection in the tube shows many air bubbles, indicating that the drainage is complete, 250 c.c. of a warm solution of a mild antiseptic prepared from Ringer's tablets glyco-thymoline, or some such preparation, is run into the duodenum and left by the removal of the tube.

The specimens are submitted to the laboratory for citological and biological study for the determination of the nature and severity of the infection, and the possible damage sustained by the bile tract and liver cells. In some cases it is well to make an autogenous vaccine from the cultures as an adjunct to treatment.

The following cases are taken at random from my records and cited to illustrate that very gratifying results may be obtained when the correct technique is maintained and the treatment is persistent and thorough, which is absolutely essential to success with the method.

Case 1.—White male, 51. Previous history, well and robust all life until February, 1923, sugar discovered in urine. Sugar controlled by diet; no insulin given. Remained sugar free. In August same year, suffered a complete physical breakdown after a strenuous political campaign, and was hospitalized for observation with a daily afternoon temperature of 104 F. Temperature invariably subsided about midnight, remaining normal or subnormal until following afternoon when it rose to 104 again, and was uninfluenced by treatment. Patient was seen in consultation three weeks after initial hospitalization. His afternoon and evening temperature had persisted for the entire time, notwithstanding the extraction of all teeth, treatment for pyorrheal condition and constant administration of the best known febrifuges. All blood examinations were negative; and extensive radiography revealed no explanatory lesions. Graham-Cole examination, however, was not done.

A gastric analysis now showed a complete achylia gastrica, and bile specimens obtained with the duodenal tube were scanty, of a dirty yellow color, and about the consistency of thick buttermilk. Incubation showed a heavy growth, many colonies, of colon bacilli.

Immediately following this first drainage a slight decline in the temperature was noted, and after a second drainage on the following day, dropped to 102. After the fourth drainage it was normal and remained so.

This man had been pronounced a diabetic and was then on a very rigid diet. During his three weeks' illness he had reached such a stage of debility as to be helpless. His physicians strongly opposed the free carbohydrate dietary advised notwithstanding that he was sugar free. A compromise was effected, and a fairly liberal dietary instituted, with a daily urinalysis. His condition improved rapidly, and against our advice he left the hospital in ten days from the date of the first drainage.

Treatment was kept up on alternate days and later twice a week until he had had twelve in all. The bile now appeared normal, though a few scattered colonies of bacillus coli appeared on culture. As he had regained 22 lbs. lost during his illness, and seemed to be in good health, drainage was discontinued and he reported once a week for observation.

Six weeks later a second gastric analysis was made and gastric secretions found to be normal.

He was now on a general diet with all the carbohydrates he desired, but much against our advice he was taking large amounts of cane sugar and its products, of which he was exceedingly fond. He has remained sugar free, however, for three and half years.

No medication was resorted to in this case while under my service except dilute hydrochloric acid for the time he was without the natural product.

Case 2.—White female, 60. A cholecystostomy eight years ago and four large gall-stones removed. Relief for two years when attacks of colic returned. Second operation January, 1925, under intensely jaundiced condition. Gall-bladder full of stones and was removed and drainage instituted. Partial relief from pain, but jaundice, nausea and vomiting persisted for eight weeks. Operative wound had made a number of attempts to close, and did for two or three days, when all symptoms were aggravated until bile again broke through and relieved the back pressure. Patient was seen in consultation at this stage, and was able to retain but little

nourishment. Duodenal tube was given and a very small amount of thick turgid bile obtained. Incubation showed heavy cultures of bacillus coli.

Three successive attempts to drain with the tube resulted in failure. The tube then was introduced in the evening, secured to jaw with adhesive and left in position all night. Drainage began about midnight and continued until seven the next morning, draining out about 1500 c.c. of thick, ropy bile, which contained two plugs of lymph-like substance, about ¾ inches in length, moulded round and tortuous as if they had remained for some time in a spiral tube. The inference was that the common duct had been thrown into a tortuous course by adhesions and had become plugged with lymph, or tenaceous mucous. Subsequent drainage was easily accomplished, the wound healed permanently and the jaundice and other symptoms rapidly subsided. Eighteen months later when seen, the patient had remained free of symptoms, had gained twenty pounds, and her diet was no longer restricted, but she ate anything she desired.

Case 3.—This was a unique case, and the only one of its kind in my experience; and without precedent in the literature on gall tract diseases so far as I have been able to ascertain.

A young man of 25, a shoe cutter by trade, had been treated for stomach trouble for several months. His chief complaint was sharp pain in right side over the region of the duodenum, from one to three hours after meals.

X-ray showed stomach normal in outline, no retention and a normal cap. As the duodenum filled, however, there appeared an indenture as if a firm mass about the size of a large English walnut was impinging from the outside and causing the lumen to appear half closed. Duodenal drainage was done, about 120 c.c. of black, viscid bile recovered and a barium meal given immediately. Both fluoroscopic and plate examination showed that the duodenum had regained its normal contour. Three more treatments were given at 2-day intervals, but from the first drainage no further discomfort was experienced. An explanation of his symptoms suggested by the roentgenologist that the pressure of a distended gall-bladder on the duodenum formed a trap as it were, that resisted the passage of food, gases and peristaltic waves, seems logical in this case.

This man has remained well and gained weight for the past three years.

Case 4.—White female, 60. Cholecystectomy eight months ago with only a few months' relief, when she became intensely jaundiced with all the attendant symptoms. She was advised against a second operation by several surgeons. Upon conferring with the operating surgeon he informed me that though he saw no evidence of malignancy at the time of operation, he now strongly suspected a malignant liver.

She had five nonsurgical drainages, which, supplemented by gastric lavage for the distressing nausea and vomiting, gave complete relief from all symptoms, including a systolic blood pressure of 210 m.m. and, with the exception of an occasional slight rise in her blood pressure, she has remained in good health.

Case 5.—B. F., white male, 37.—Became suddenly jaundiced in March, 1926. Referred to Mayo clinic July same year. Duodenal drainage attempted several times with the tube but without results. Operation advised, but he was told frankly by C. H. Mayo that it would be purely exploratory as no definite cause for his icterus had been determined. Did not accept operation, and came home. He returned to Rochester in late summer for the operation, but as his condition showed improvement he was treated by rest and a high carbohydrate dietary. Improvement was gradual and he became almost free of jaundice and the accompanying symptoms. He remained in fairly good shape until November, when he became intensely jaundiced again, with nausea, vomiting, and occasional chills and rise of temperature. He was also extremely neurotic.

Patient was seen by me on December 18th and use of the duodenal tube begun. There were many attempts to clear the obstruction or stasis, that were complete failures, then occasionally we had a partial success. After eight or ten weeks of persistence our efforts were rewarded by copious drainage through the tube. Improvement was now rapid, he gained weight, and was practically clear in five or six weeks. He has had two slight relapses since July, 1927, due to dietary indiscretion.

Recovery from the first relapse, while on a trip away from the city, was made by rest in bed and strict diet. The second was relieved in a few days by the use of the tube, and without confinement to bed.

The cause of this man's protracted icterus was never determined. He probably has a permanent damage to the liver cells that may give him further trouble with any indiscretion in diet or habits.

CASE 6.—E. H., white male, 68. History of "bilious attacks" with pain and tenderness over liver and gall-bladder area and below right lower ribs, accompanied by severe headaches, dizziness, nausea and vomiting for the past ten years. Also has had multiple arthritis for the same length of time. Joints always swollen and more tender during the "bilious attacks."

Bile obtained by duodenal method very thick with mucous and pus. Many heavy colonies of bacillus coli on culturing.

After six duodenal drainage treatments there was very little pus and only scattering colonies of colon bacilli. The patient was first seen on April 21, 1927, and on May 7th, after ten drainage treatments, the bile appeared clear and free from pus. No culture was made. The patient has remained free from symptoms; though some of the arthritic joints still show some swelling, but no pain or inconvenience is felt now and the condition of these joints seem still to be improving.

SUMMARY.

1. Nonsurgical bile tract drainage has won a merited place in therapeutic measures.

2. Persistence and proper technique is essential. Slipshod methods will not obtain results.

3. It is a safe procedure in cases of poor surgical risk.

4. It can be safely and successfully used in the private office without loss of time to the wage-earner.

5. It seems equally as effective in cases in which the gall-bladder has been ablated as in primary cases; and is therefore a valuable adjunct to surgery of the upper right quadrant.

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CESAREAN SECTION, TYPE OF OPERATION INDICATED*

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For centuries the procedure of removing living baby from the womb of the mother has been much discussed. There has been great advance since that long-ago day of the "lex regia," later known as "lex cesarea." This law was made in 715 B. C. to remove from the womb of a dying mother the child with the hopes that it might live. Probably long before this the primitive people took some such step. As far back as the year 1500, there is on record the case of a woman named Nufer, who was long in labor and despaired of by the midwives, was delivered by a swine spayer by the abdominal route and lived. Authorities doubt this being Cesarean but delivery of extra uterine child, and it was not until 1610 that they first accepted report of true Cesarean.

In 1876 Dr. Harris of Philadelphia gathered statistics showing that the mortality of abdominal delivery was 84%. It was in this year that the first real progress was made, Porro's supravaginal amputation of the uterus proving a great safeguard and opening up a new field for the safety of the mother. Prior to that she had been expected to and did die.

In 1888 Saenger did the first conservative section now known as the classical. Since that time there have been numerous types described.

The development of the extraperitoneal Cesarean as first described in 1907 by Frank of Cologne and its modification by DeLee, Beck and others, was another real forward step, offering a far safer way of delivery of possibly contaminated cases. It has taken many years for this procedure to take its proper place with the average operator, the Saenger operation by far predominating.

With the development of aseptic surgery, there has been such a continued increase in the number of Cesareans until it has become a menace. Because of the ease with which it is done and its spectacular nature, any case, no matter how long in labor, infected or not, was operated. As a result there has been a great furor raised against the operation and the pendulum of popularity has, within the past year or two, swung the other way.

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Fortunate, too, that this has occurred, because it brings us up sharply against the fact that this is not a panacea for all obstetrical ills. The pendulum, I believe, has reached the apex of the back-swing, and with greater care in selection of our cases and the type of operation, the mortality will decrease.

During the past year the subject of Cesarean has been much in print, a great deal of the discussion being derogatory. Not but that all agree that the operation has its indications, but that it is often done where some other procedure would be more suited. The mortality is too high certainly, but one must take into consideration that it is not the operation per se, but the fact that it is done so often in last resort cases with high mortality by any method of delivery.

Statistics are easy to work with. They can be used to prove almost anything according to the way handled. In Cesarean section the mortality ranges from about 1% in selected cases to as high as 30%, the average being about 10%. However, Mosher[1] quoted Newell's survey of hospitals within a radius of 40 miles of Boston revealing mortality of 100% in 100 Cesareans. Astounding to say the least.

The earlier the surgeon and obstetrician come to realize that this is one of the conditions that requires more judgment than skill, judgment in the type of case and in the type of operation, the earlier will the mortality rate be lowered. Practically all the statistical reports to this date are those of the classical Cesarean, the most dangerous of all if used as routine.

There are numerous types of abdominal methods of delivery, all of which can be classified under the head of classical or high, cervical or low, and the Porro.

It is in the selection of the type of operation to be used that the best of judgment is to be exercised. One of the three mentioned types offers a comparatively safe way of delivery for most dystocias. There should be no cut and dried routine for any condition, especially is this true of conditions indicating Cesarean section. As I have said before, judgment is needed more than skill here.

The Saenger, or classical operation, is rapid and very spectacular—a few quick incisions, a rush of blood and a baby in a little more time than it takes me to say it. That is fine if the uterus and its contents are free of contamination. If not, the results may be, and often are, disastrous. It is the use of this type of operation indiscriminately that has been a big factor in the high mortality following Cesarean. It is not the knowledge that infection is present, but the possibility of any contamination that should warn against this type of operation. Let me emphasize this by saying that any case, no matter how free of evident infection, that has been exposed to contamination by vaginal examination should not have classical Cesarean section.

The low or cervical section, although not so spectacular, nor so rapid, nor so easy, offers great advantages in the potentially contaminated cases. Not the frankly infected, but those in which there have been vaginal examinations. It is not seldom one sees a case that has examination made under the best of precautions by accoucheur who is careful of his technique. It may seem that this would be safe for classical section. This is not so however. If there is any possibility of contamination, the low section is indicated. The more cervical and the fewer classical sections we have, the lower the mortality will be.

DeLee,[2] Polak,[3] Henkle[4] and many others have devised various types of low section. We favor the operation of Kroenig, in which, after opening the abdomen through a low medium incision, the peritoneum is incised transversely across the uterus at the reflection of the bladder. The bladder is then pushed down off the lower segment of uterus and the upper peritoneal flap is easily pushed up towards the body of uterus. Pad is tucked in about upper margin of wound and a longitudinal incision made through thin wall of uterus, there being little bleeding at this site. The head of baby is then guided out of opening by use of one or both blades of forceps and baby delivered. We then deliver placenta and uterine wall is closed by two rows of chromic catgut. Following this the transversely cut peritonium is sutured which makes the uterin wound extraperitoneal. There is little chance for soiling as gut is usually not even seen and pad at wound margin caring for the spill. Broadhead[5] goes so far in this operation to suture the peritoneal flap of uterus to that of anterior abdominal wall. We believe, however, that with use of pad, as described, that spill is well cared for.

The third type is modified Porro, this being used in any frankly infected case or one in which any great amount of vaginal operative procedure has been done. The indications for this are becoming fewer and for the cervical type more

frequent. This operation takes but little more time than the classical type and the loss of blood and shock is about the same. Following amputation of the fundus, the cervix is sutured and peritonized as after any hysterectomy and dropped back in abdomen instead of being sutured into abdominal wound as advised by Porro. Their patients as a rule do beautifully. The convalescence, as a routine, is smoother than following classical operation. This is because in the latter type the abdomen is inflicted with large boggy mass for many days which seems to cause more distention and distress.

Being so impressed with the difference in the immediate postoperative condition of these cases, I wish to suggest for your criticism a procedure I am going to try. Eclampsia, as we know, gives the highest mortality of any condition occurring during pregnancy. The mortality is high no matter what method of delivery is followed. Most authorities agree on the use of magnesium sulphate intravenously and if convulsions are not controlled in six hours, to do Cesarean. Realizing that the uterus is not the seat of the toxemia in eclampsia, this being liver or kidneys as case may be, but also appreciating the fact that there is certain amount of toxemia in this big body and also knowing that the postoperative condition is smoother following its removal and the shock no greater, I am going to do a modified Porro in the next eclampsia in a woman who has other children and can spare the uterus. This may seem drastic but it may be just enough to throw the scales towards safety. I hope for discussion and I no doubt will hear it on this observation.

During the past two years since we began the low Cesarean, we have done 23 Cesareans—only a small number but enough to get some idea of fitness of different types of operation.

These operations are grouped as follows:

Classical Operations		13
Contracted pelvis	6	
Premature separation of Placenta	1	
Eclampsia	4	
Placenta previa	2	
Cervical		7
Eclampsia	1	
Breach—30-hour—no dilatation	1	
Contracted pelvis—test labor	3	
Placenta previa	2	
Porro		3
Contracted pelvis—in labor 40 and 48 hours	2	
Placenta previa, temperature 101	1	

Of this group we had one death. The eclampsia in the cervical group died. She had magnesium sulphate intravenously—three injections.

This gives a mortality of 4.3%, but of this we had ten cases that were not good risks from classical standpoint. There were no deaths from infection.

SUMMARY.

Cesarean mortality is too high, not so much because of too many Cesareans, but because the type of Cesarean used is at fault. Improvements in technique have now reached such a stage that indications have been much increased. I know that Cesarean is safer both for mother and child than high forceps, both from mediate and immediate standpoint. The classical operation to be done only in very selected cases. If this be done, there will be no deaths from infection. The cervical operation will prove the most universal type.

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THE ROENTGEN DIAGNOSIS OF INJURIES TO THE VERTEBRAE; WITH SPECIAL REFERENCE TO THE LUMBAR REGION.*

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In the past several years I have been impressed with the increasing frequency of injuries to the spine and especially to the lumbar region which is the area most often involved. These injuries occur to all portions of the spine, but I shall deal with the lumbar region only.

The present day automobile, driven at high speed, accounts for many accidents with injuries to the spine. Industrial accidents also produce a considerable number. The injuries from the automobile are steadily increasing. I have made no effort to work up a statistical survey but have collected a number of cases from the work in our office and from the services of St. Vincent's and Duval County Hospitals.

The history indicates that such an injury in an automobile collision is produced by the individual being thrown against the top of the

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car with bending violence. These patients complain of a "lame back" which is too frequently diagnosed a "sprained back." Many with fractured spines actually *walk* into the office of the roentgenologist. Some come late, seeking the reason of a kyphotic deformity and disability. Fractures of the spine may involve the vertebral bodies, the lamina, the spinous processes, or may be combined with a dislocation. Excepting fractures of the lamina, they are readily demonstrated on the X-ray film.

The type of injury most often seen is a compression fracture of one of the bodies of the vertebræ. It is very seldom that one sees an injury to more than one vertebral body. Occasionally, but quite infrequently, one may encounter such an unusual injury. For example: the body of the first and third lumbar will show a fracture with the body of the second uninjured. Fractures of the transverse process are common and generally the results of direct violence to the area involved.

Kümmel's disease is really the late results of a compression fracture of the vertebræ in which a kyphotic deformity is present with symptoms of lameness and nerve pressure.

Film study of many spines in the course of routine examinations of the urinary tract, gallbladder region and other areas have shown changes from the normal which are undoubtedly due to age, posture and occupation and do not give rise to symptoms. These changes incident to age, posture and occupation must not be confused with those the results of trauma. Variations in the spine from congenital failure of development are quite commonly seen with no symptoms and these must not be confused with injuries.

The early and prompt examination of the injured spine will show such changes and differentiate them from the results of trauma. Later, such differentiation will be extremely difficult. The legal aspect as well as the aim of careful and accurate diagnosis indicates the wisdom of a careful roentgen study of the spine in its entirety if possible; certainly the area with the symptoms should be examined.

In the roentgen study one should always have the antero-posterior and lateral films. The antero-posterior will give more information if stereoscopic. The films must be of good detail and are preferably made with the Bucky diaphragm. One should remember that in recent injury a large hemotoma may be present, or the soft tissues may be markedly swollen, and if so, brilliant contrast and detail can not be secured such as is obtained in films made in the late stages of such injuries. This is no excuse, however, for not securing good diagnostic detail when the Bucky diaphragm is used and the patient properly immobilized. I must stress the necessity of the lateral film as some of these injuries will only be seen in that view.

I personally feel that fractures of the spine should be rigidly immobilized for several months. Following such an injury the bone structures of the spine have their lime salts absorbed and become softened. It will be a number of months, depending on the severity of the injury, before the lime salts are redeposited in the bone and it fully repairs itself. Weight bearing and pressure on the bodies of the vertebræ during the period of softening is bound to result in deformity. Such deformity may result in permanent symptoms.

DISCUSSION.

Dr. J. C. Dickinson, Tampa:

Dr. Cunningham has emphasized the absolute necessity of lateral films in cases of back injury, and I do not think this can be over-stressed. It is not uncommon in a given case of injury to a lumbar spine that the amount of injury demonstrated in the antero-posterior film is not great, but when a lateral is obtained the deformity may be very much greater than has been anticipated.

It is sometimes difficult to obtain satisfactory lateral films, particularly in those cases in which there are multiple injuries making it extremely difficult to turn the patient on the side, such injuries as fracture of the pelvis, crushing injuries to the chest, injury to the shoulder, etc. In such cases it is possible, by blocking the patient up on pillows, to use a portable machine and obtain a satisfactory film without turning the patient. Such films are not beautiful but they can be made diagnostic.

Fractures of the transverse process are commonly overlooked, and I think this accounts for many of the lame backs that do not recover satisfactorily.

Another fracture which I think often goes unrecognized is one of an osteophyte some place along the spine in a patient who has chronic hypertrophic arthritis. What would ordinarily amount to a trivial injury may, in this type of patient, result in a prolonged period of disability.

Dr. F. L. Fort, Jacksonville:

While you are treating back injuries, I want to impress upon you that you can not afford not to have good pictures; I mean by that, good antero-posterior and lateral views of the spine. That is the only way you can tell. For instance, we will take a case of traumatic neurosis of the spine. To all intents and purposes they have a serious injury, but it would be a very serious mistake to treat them as if they had a bone injury. Only with good X-rays can you be positive when you have such a case. And when you have "compensationitis," as some of them do, how are you going to tell without good pictures? I would like to say, poor pictures of the spine are in general worse than none at all; certainly in my experience. You have not done all you can do until you have lateral views. Besides the traumatic neurosis, there are two or three other things in which X-ray aid is well nigh indispensable; for instance, a severe injury with compression fracture, not necessarily paralyzed in the beginning. But every broken back is potentially liable to develop paralysis if left untreated. You must do your laminectomy, if you do at all, within 72 hours to get results. Only with good X-ray pictures can you determine when your laminectomy is indicated. And I say again, have both antero-posterior and lateral views to determine whether to do that laminectomy or not.

There is another type of spine injury horribly treated in the past, but I hope not so badly in the future. That is the so-called compression fracture or "Kümmel's disease, in which the film shows slight packing down of the cancellous bone of the vertebra. In many cases they are overlooked. The patient keeps on having pain and goes from one doctor to another and nobody can make a correct diagnosis until the kyphosis occurs.

Now I will close by saying again that I insist on antero-posterior and lateral views, because you will often regret it if you don't, and you can't explain to a jury why you didn't have pictures, when somebody else finds a fracture you didn't.

Dr. G. Raap, Miami:

The men who have discussed the paper have brought out the necessity of lateral films. This discussion resolves itself into a matter of discussion of technic among the roetgenologists, but I believe it is a good thing for the general practitioner to know how many pitfalls there are in an examination of this type. Some time ago I had a case which illustrated this very forcibly. Dr. Cunningham brought out the fact that a great majority of these injuries result in a compression of the body of the vertebra; that is true, I believe, in almost 90 per cent of these cases. There are, however, certain areas about the spine that are certainly very difficult to show, even with the best of X-ray films. I am speaking now of these cases in which the lamina are injured and the articulating structures behind the body of the vertebra and for this reason, although it wears out X-ray tubes very rapidly, I have been in the habit lately of making several lateral films and varying the technic so as to bring out in some of them the body of the vertebra more distinctly and in others the surrounding structures. In two of these I showed fractures at the bases, or anterior ends of the spinal processes, just where the two of them joined the body. Both of these had been observed before and the fractures not found on account of lateral films being made to show the bodies of the vertebra rather than the finer structure posterior to the bodies.

A second matter Dr. Fort touched upon, that is the results which come to our attention months after the injury. The patient will give you the history and state he got along very nicely after mobilization for a period, but several months later he develops a complaint which generally does suggest "compensatitis." However, all of these cases are not entirely fakir in their origin. There are some of them which are termed radiculitis. Dr. Nielsen, of Battle Creek, reported some thirty cases recently in which he made this diagnosis, and in his paper he states in many ways he may be censured because of the fact that he is speaking about the very subject which the chiropractors harp upon so much. However, he states in some of these cases operative procedure showed there was impingment of the bone upon the nerve root with resultant distress. Two of these cases I saw recently were diagnosed as radiculitis by the neurologist in whose hands they fell after they had been with the roentgenologist and internists for some time. I think that is a matter we ought to bear in mind; for that reason proper mobilization is certainly indicated over a considerably longer period of time than we have been in the habit of thinking necessary. I have noticed in some of these films we have made some time after injury that the

change in the porosity of the bone during the process of healing is quite marked, and if you X-ray this patient, using the same technic you use immediately after the injury you wonder why the films seems to be over exposed, but it is apparently due to that increase in porosity, and you will find it is quite well defined in the area immediately adjoining the injury.

The matter of lateral films can not be stressed sufficiently and I believe we ought to make several lateral films in all of these cases.

Dr. Cunningham (closing):

Stressing the lateral film is very necessary, because, as Dr. Dickinson brought out, you very frequently hate to move these patients, but unless there is almost 100 per cent contra indication they should be moved to enable you to get your lateral film.

I did not refer to the unusual fractures because as a whole they don't give you so much trouble as fractures of the body. It is likely there might be slight compression of the body which would be overlooked, yet in some of the films I have seen you can pick up very minute changes. Those changes, if untreated, will later on show marked compression of the body and probably pressure symptoms, and I want to stress the point they should be examined early. Any suspected back injury should be examined early and again later if necessary. If there is a definite diagnosis of injury that spine ought to be mobilized. So many think these bones repair themselves quickly; I don't think so. There is a considerable period in which the bodies of the vertebræ are softened and a considerably longer period in which they recalcify and regain their tone.

LUNG CANCER WITH A REPORT OF THREE CASES*

JULIUS C. DAVIS, M. D.,
Quincy.

Primary carcinoma of the lungs is considered relatively rare; sarcoma even less frequent. Judging from recent literature and three cases that have come under my observation during the past three years in general practice, lung malignancy is a more frequent occurrence than is generally believed.

Berblinger reports the increase in different localities at different periods. In Basel, in the period of 1900-1911, 2.1 per cent of all carcinomata were of the pulmonary type and in 1924, 4.9 per cent. In Leipzig in 1920 the pulmonary type reached 6.5 per cent. From 1917 to 1924, 3,659 autopsies at the Cook County Hospital revealed 21 cases of primary carcinoma of the lung, a percentage of 0.57 of all necropsies. Statistics by various authors indicate an incidence of 0.15 per cent or more of all autopsies, about 1 per cent of all are carcinoma and 2 per cent of all deaths from pulmonary disease. Lord states that in the combined statistics of Reinhard, Fuchs, Wolf, Passler and Froelich, primary cancer was found but 105 times in 46,169 autopsies. McMahon and Carman have found the total authentic cases of primary carcinoma reported up to this time, to be 428. They report 7 cases collected in the Mayo Clinic.

ETIOLOGY: The white race is more predisposed than the colored race. More than one-half of the autopsies performed were on negroes who are very susceptible to tuberculosis, and yet, only 2 of the 24 cases of primary cancer of the lung were found in negroes. The majority of writers agree that a chronic irritation is the most important cause of primary cancer of the lung. Chronic irritation may be due to trauma and infection. The number of instances of chronic pulmonary infections that develop pulmonary carcinoma do not sustain this theory. However, the existence of lung cancer in miners of ores containing arsenic and cobalt support the theory that chronic irritation due to mechanical or chemical means is an important etiological factor. It has also been claimed that the inhalation of irritating gases from automobiles and industrial processes and dust containing particles of tar from tarring the roads and streets is responsible for increased incidence of lung cancer, the whole of which in my mind is doubtful. I am inclined to believe the old theory of embryonic rests, *i. e.*, that these rests may be equally irritated by chemical, mechanical, bacteria or their toxines or any exogenous or endogenous substance, whereby a malignancy is developed. It is just as reasonable to attribute the same cause of a malignancy in the lung as any other tissue.

SYMPTOMATOLOGY AND DIAGNOSIS: There are no definite physical signs or symptoms that stand out as pathognomonic, as the symptoms vary with each individual case according to the type, location and areas involved. A pulmonary cancer should always be thought of when a patient is of the cancer age, begins to cough and

*Read before the 55th Annual Meeting of the Florida Medical Association, Tampa, April 3, 4, 1928.

has dyspnea, gradual loss of weight, pain in the chest, with or without pleural effusion; when such a patient shows no symptoms of cardiac, arterial, renal disease or tuberculosis. However, a tubercular condition and a cancer may exist at the same time. The majority of authors list tuberculosis as an etiological factor. Autopsies on equal numbers of tubercular and nontubercular patients do not bear out this statement. The examination of the sputum and pleural exudates may show tumor cells and elastic fibers that can be identified. More often the findings are negative. Bronfin in reporting three cases was able to make a diagnosis in two cases by the characteristically grandular cell believed to be pathognomonic of a malignancy as practiced by Mandlebaum and described by Blumgarten. Many of these cases are mistaken for pulmonary tuberculosis, lung abscess, bronchiectases and aortic aneurysm. The only evidence in favor of a malignancy in some of these cases is the serosanguinous fluid, blood streaked sputum, rapid cachexia and negative laboratory findings. Taking the subjective and objective symptoms together with roentgen ray bronchoscopic examinations and exploratory thoracotomy, are measures advocated in attempt to make an early diagnosis. McMahon and Carman believe that the X-ray will early point to a pulmonary lesion and its probable nature. Thomas and Farmer affirm that by X-ray the nature of the new growth may be diagnosed before clinical signs. Staehelin states that the detection of tumorous elements in the sputum definitely determine the disease. Bard concludes that the pleural exudate of a cancerous origin possesses a hemolytic action on the patient's red cells, a phenomenon missing in the exudates of infectious origin. Others believe that an exudate rich in albumen may be considered pathognomonic of cancer.

Case I. Carcinoma of the left lung. C. H. C. Male, age 53; date of examination, September 22, 1925. Past history: Typhoid at 30, influenza, 1918; attacks of malaria at various times of life; operation stone in kidney, 1913; operation hemorrhoids, 1893; chronic cough which subsided with abstinence from tobacco; has taken alcoholics in moderate amounts; bowels always constipated. For two or three months complained of pain in left back and for ten days slight cough with blood streaked expectoration, loss of weight and strength and some dyspnea, more marked in the past two weeks. Physical examination showed a very thin man; weight, 140; height, 5 feet 10 inches; temperature, 98; pulse, 104. Pupils equal and reacted normally, no teeth, submerged tonsils which showed evidence of chronic infection. Thyroid was not enlarged. Heart somewhat enlarged, soft systolic murmur at the apex, not transmitted, poor heart sounds, superficial arteries, tortuous and hard; blood pressure, 155/105. Lungs normal on right, breath sounds and percussion note somewhat impaired at the left apex. Flatness from the 5th interspace to the base anterior and from the midscapula region to the base posteriorly. Over this the breath sounds were present and at the upper level of this area oegophony was present. X-ray of the chest that day showed a pleural effusion on the left side and extending above the level of the fluid was a shadow suggesting a new growth. After aspirating 1300 c.c. of a markedly bloody fluid, X-ray showed a mass in the left hilum region composed of three distinct nodules and with this, the history of bloody fluid from the pleural cavity it seemed rather certain that the process was a new growth. Rapid metastases accompanied by increased cachexia, involvement of the spleen, liver and mesenteric glands. Death occurring January, 1926, a duration of about 6 months.

Case II. Carcinoma right lung. Mrs. J. H. T., age 53. Past history: malaria for 30 days in 1913; influenza, 1918; very severe and of two weeks' duration; severe attacks of cold since that time. Left breast amputated, 1916; appendectomy, 1920; treated for choleocystitis one year ago. Complained of shortness of breath, indigestion, coughing after taking food and occasional vomiting provoked by cough, tight feeling around left lung, choking sensation, dull pain throughout right lung, asthmatic tendency, breathing better at night than day. Physical examination revealed a woman with a pale, pasty skin, weight 145 pounds (had weighed 172), pulse 96, blood pressure 190/100, slightly jaundiced, cachexic, anxious and melancholic appearance, few moist rales in apex left lung, diminished vesicular resonance over entire right lung, increased size in right side of thorax, flatness over entire right side. X-ray at this time showed the entire right lung to be cloudy. After aspirating 2000 c.c. of a serosanguinous fluid there was still a dense area from the 5th interspace down. The picture at this time revealed

evidence of a new growth of a progressive metastatic nature. This patient continued to go from bad to worse until the time of her death 4 months later. The chest was aspirated twice subsequently, getting less fluid each time. I believe that too long a period had lapsed from the time of breast removal to consider it metastatic.

CASE III. Lympho sarcoma. M. C. M. Male; age 71. Past history: Weight two years ago 190 pounds. Good habits, very energetic life as an educator, lecturer and capitalist. Family history negative. Always healthy and robust. Operation for appendicitis at age 45; no other illness of any consequence. At age 69, when first examined, did not appear a day over 50, but his heart had begun to definitely enlarge to the left, no murmur but a reduplication of the first sound. Blood pressure, 210/130; pulse, 92. Urine: albumen 3 plus low in solids and both hyalin and granular casts, an obvious sclerotic brights. X-ray of chest, July, 1926, showed a band of fibrosis running through the middle of both lungs with a good deal of fibrous change in both lungs. In December, 1926, he developed a cardio vascular *syndrome*, the brunt of this *syndrome* being borne by the heart muscle, the heart being markedly enlarged in all dimensions, more especially the left ventricle. At this time he suffered from spells of dyspnea which were threats of cardiac failure. After a long rest in bed, proper diet and elimination, I noticed that he was gradually losing weight and becoming somewhat cachexic. His chest was reX-rayed with the following interpretation: heart shadow markedly enlarged, old fibrous pleurisy in right base, opaque shadow in mediastinal space behind the pericardium having the appearance of a calcarious deposit. X-ray October, 1927, showed a definite pleural exudate displacing the heart to the right nipple line which was formally displaced to the left axilla. X-rays made from time to time show increased density of the left lung with evidence of a metastases from the mediastinal gland with a solid mass formation of the lower lobe of the left lung. His weight 12 months ago was 190, now 131 pounds, his hemoglobin has dropped from 90 to 50, had no fever, cough or night sweats. No pain in the chest, only dyspnea and a tight feeling.

Two of these cases being carcinoma and the other lympho sarcoma with their variable symptoms, prove the wide range of symptoms in chest malignancies, yet there were some symptoms identical in all three cases. CASE NO. I of the left lung and lived 6 months from time of diagnosis. CASE NO. II of the right lung had been sick for 2 months when diagnosis was made and lived 4 months longer. CASE NO. III, sarcoma, and now living 12 months after diagnosis but surely progressing to a fatal termination. Two of these patients complained of pain and dyspnea and had cough, all had pleuritic exudates, none had night sweats or temperature except the two that succumbed and then only in the extremis.

CONCLUSIONS: Dyspnea, gradual loss of weight, progressive anemia with or without cough or pleuritic exudate, with dense shadow in the lung with absence of tuberculosis is sufficient evidence to cause us to seriously consider a lung malignancy. The X-ray, exploratory thoracotomy and thoracentesis are valuable procedures in determining the location and type of neoplasm. Thoracotomy will no doubt in the future become more popular as a diagnostic means as well as enabling the removal of the growth in accessable localities with the possibility of saving a few of these patients by its surgical removal.

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DISCUSSION.

Dr. H. Gates, Bradenton:

I enjoyed the paper very much; it enlightened me; I have been practicing medicine for thirty-six years, and I have probably had some of these conditions and did not know it. I am like the old countryman running a store; a fellow came in and wanted some onions; the old fellow says, "I'm sorry I haven't got any now, but I'm expecting some in a few days." After the fellow had left, the storekeeper scratched his head and directly another party was in there, and he said, "I believe that damn fool wanted inguns; I had plenty of them." That is probably my trouble. I have had plenty of these cases but didn't recognize them. I had some cases of flu with pleurisy. I didn't know whether it was in order or not, but I had treated them for the flu and

didn't get any results, so I just took 10 c.c. syringe full of serum from the pleural cavity and injected it back into patient hypodermically. It was an autogenous vaccine and it cleared up the condition in the lung.

Dr. Davis, (closing):

There is nothing further I wish to add to the discussion.

OSGOOD-SCHLATTER'S DISEASE—WITH CASE REPORT

S. Ward Fleming, M.D.,
West Palm Beach.

Partial separation of the tubercle of the tibia is a condition occurring occasionally in stout, athletic boys of ten to fifteen years. The explanation of this lesion probably lies in the developmental formation of the tibia which will be discussed later. The upper epiphysis of the tibia has an anterior tongue-shaped projection which is frequently exposed to extreme muscular force or direct trauma during a period of life antedating bony union. Therefore as Scudder[1] remarks, injury which in youth produces a partial separation of the tubercle, in adult life produces a partial avulsion or fracture. Complete avulsion of the tubercle is rare, probably because it receives only the central part of the insertion of the ligamentum patellae, its lateral margins being attached on each side of the upper part of the shaft of the tibia. In the case which I am describing below both a partial separation and a partial avulsion of the tubercle are seen to be present. To Osgood[2] belongs the credit for the first description in 1903 of the etiology and pathology of the condition which bears his name. Schlatter's[3] report did not follow until 1908.

The explanation of this type of bone lesion as well as similar conditions occurring elsewhere in the body can be found in a brief review of the anatomical development of the part under consideration. There are commonly only three centers of ossification in the tibia; one for the shaft appearing in the seventh or eighth fetal week; one for the upper epiphysis appearing usually in the last month of fetal life and uniting with the corpus in the 19th-24th year; and one for the lower epiphysis appearing in the second year and uniting with the corpus in the 16th-19th year.[4] Several observers have noted that there is occasionally an additional nucleus developed for the tuberosity at the 11th-13th year which quickly fuses with the main body of the epiphysis. Scudder[1] states that this tongue-shaped tubercle probably has its own bony nucleus appearing at 11 years and merging with the upper tibial epiphysis at 15 years. Gray[5] mentions two additional centers which occasionally exist in the tibia, one for the tubercle as noted above and one for the medial malleolus.

The symptoms and local signs of Osgood-Schlatter's disease vary considerably.[6] In the cases which are bilateral and usually less severe the onset may be insidious with aching after exercise, localized tenderness, loss of speed in running, and little demonstrable X-ray signs. In the cases which are unilateral the onset may be more abrupt with a preceding history of unusual exertion or trauma. Frequently the pain on movement, swelling, and marked tenderness date from a football game. The team's favorite drop-kicker or punter may be disabled for the part of the game in which he is most proficient. In these acute cases there may be an associated bursitis, less often a synovitis, since the joint capsule does not extend to the tubercle as a rule.[7] Roentgenograms may show a definite separation of the tubercle or even a partial avulsion. The diagnosis may be confused with traumatic periostitis, osteomyelitis, localized tuberculosis, or possibly beginning new growth.[1]

The treatment consists primarily in immobilization of the knee joint by the use of a posterior splint which removes the strain incident to the continued use of the quadriceps muscle and allows the tubercle to become firmly attached. Flexion should be prevented for three to six weeks, violent exercise for four to six months or longer. Bone pegging has occasionally been performed for marked separation of the epiphysis. Cotton[8] recommends removal of avulsed fragments through an incision splitting the ligamentum patellae. Osgood himself, in a personal communication, recommended a similar procedure if the syptoms were acute.

CASE REPORT.

A colored boy, aged 16, of stout muscular development, first noticed pain and tenderness in region of the left tibial tubercle about two years ago. There was no definite preceding trauma. Disability has been especially noted after running, climbing stairs, or playing foot-

ball. The family history is irrelevant. Laboratory and serological data are negative.

Physical examination reveals no significant findings elsewhere. The region of the left tibial tubercle is distinctly enlarged and very tender to pressure, especially when the leg is flexed; then the deformity becomes quite apparent. On fluoroscopic examination there is noted a distinct difference in the outline of the two tubercles with a slight separation on the left, and a movable bony shadow just anterior and above. The details of this condition are brought out well in the films.* The movable bony shadow is seen to be formed by three rounded masses from 0.5 to 1.0 cm, in diameter. The fourth is very small and lies nearest the cup-shaped area of detachment. There is a slight separation of the tubercle which does not reproduce well in the photograph.

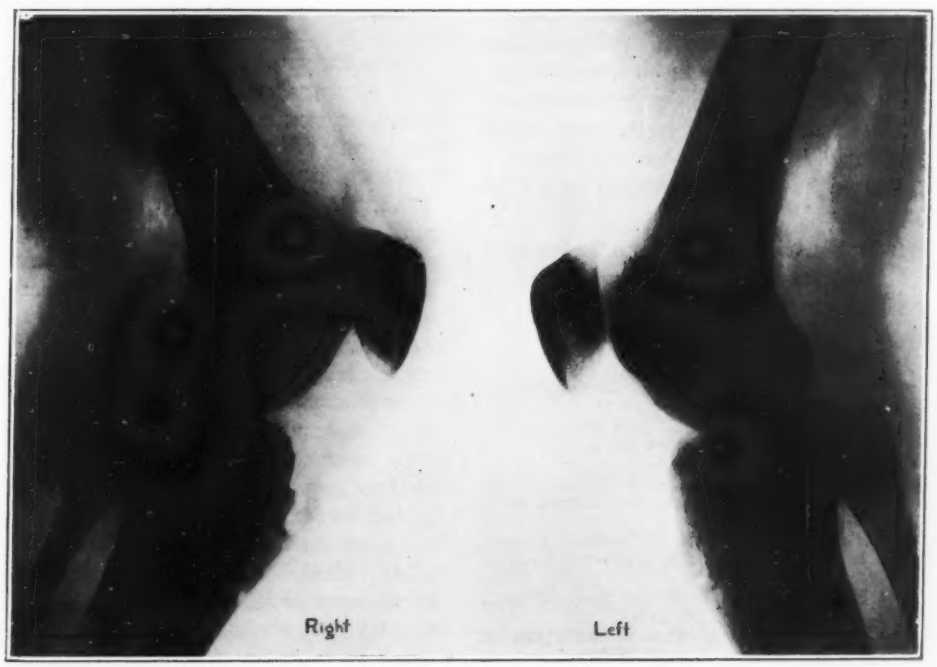
Since operative removal of the fragments was not favored by the patient, a posterior splint was applied for three wekes with immediate relief of the acute symptoms. Violent exercise must necessarily be restricted for a longer period than if operation had been performed.

It is interesting to note other epiphyseal lesions which are thought analagous to Osgood-Schlatter's disease. Kohler's disease of the tarsal scaphoid is a condition most commonly encountered in boys from three to ten years, whose chief complaint may be slight tenderness over the dorsum of the feet. The roentgen ray reveals a thinning and increased density of the bony nucleus.

Infraction of the head of the second metatarsal was first described by Freiburg[9] in 1914. The localized pain, tenderness, and slight swelling usually produce considerable disability. Girls are more frequently affected than boys. As Lewin[10] states, the roentgenogram is necessary for accurate diagnosis. The typical case shows flattening of the metatarsal head, broadening of the neck and distal portion of the shaft, widening of the joint space, diminished cupping of the proximal phalanx, and an occasional line of incomplete fracture. Loose bodies are occasionally found.

The condition first described by Legg,[11] later by Calve and Perthés,[12] is one of the most definite epiphyseal lesions of this type. It is characterized clinically by symptoms suggestive of tuberculous coxitis, occurring in boys more commonly than girls. Roentgen ray shows fragmentation and areas of increased density in the

*By courtesy Dr. F. K. Herpel, Good Samaritan Hospital, West Palm Beach, Florida.



femoral head, later marked coxa vara, with flattening of the head and broadening of the neck.

Scheuermann[13] and Buchman[14] have recently presented evidence to explain certain cases of juvenile kyphosis by changes in the vertebral epiphyses. The disease occurs more commonly between the ages of ten to twenty years with the complaint of tenderness, backache, and slight deformity. Roentgenograms show fragmentation of the epiphyses when they can be seen and haziness of the joint spaces.

Processes analagous to Osgood-Schlatter's disease and the above have also been described in the os calcis, the olecranon, the ilium, and the semilunar bone. Probably other locations will be noted in time.

Although there is general agreement that this group of epiphyseal lesions are of the same type, the etiology and specific pathology are a matter of discussion. Christie[15] states that "a majority of investigators incline to the idea that the disease is due to long-continued or occasionally acute trauma, with resulting interference of circulation and subsequent necrosis involving both the bone and cartilage of the epiphysis." Lewin[10] believes the etiology to be trauma affecting the bone and cartilage during a period of unusual growth. Williams[16] objects to descriptive terms such as epiphysitis which suggest inflammation where he considers none exists. All agree that the condition is not luetic, rachitic, or tuberculous. Those who deny the infectious theory and accept that of trauma, differ in their opinion of the pathology. Some observers see inflammation, others a healing fracture, and others an aseptic necrosis.

Regardless of these differences, the general rule of treatment with modification according to location, consists in rest and freedom from trauma.

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SOME OBSERVATIONS ON THE WASSERMANN TEST*

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Not many years have elapsed since through the epoch-making researches of Wassermann and his coworkers the medical world has been provided with one of its most powerful aids in the diagnosis and treatment of probably the worst of our disease enemies and one of most protean manifestations. There is much truth in the aphorism of Dr. Osler, "Know syphilis in all its manifestations and relations and all other things clinical will be added unto you." Syphilis, like the poor, we have always with us, but unlike the poor we often do not recognize it. We may come into this world with the heritage of syphilis and we may pass it on to generations yet unborn. No age, no sex, no clime, no class is exempt. Once having had the disease there is none that ever dare give assurance of full freedom from it.

With these facts before us there is no wonder that the subject of syphilis, though hackneyed it may seem, is ever a vital, appealing subject.

The great mass of literature that has accumulated in the discussion of the causative organism, the treponema pallida; and in discussion of treatment, especially salvarsan and allied remedies; and in discussion of laboratory findings; this immense amount of literature makes it difficult for the younger graduates in medicine to realize how very recent are the great advances in the study of the disease as compared with the age of the disease itself. The year in which I entered medical school, 1905, Schaudinn demonstrated the treponema pallida. Before I had finished my four-year course Wassermann had given to the

*Read before the regular meeting of the Dade County Medical Society, December 2, 1927.

world his intricate but invaluable serum diagnosis. My interneship was scarcely ended when Ehrlich announced his discovery of salvarsan. This rapid succession of events in syphilology—etiological, diagnostic, curative—have formed the substructure of an enormous amount of work along all three lines.

Etiologically.—The treponema pallida has been studied in many ways and from many varieties of lesions. Today its presence as demonstrated in dark field preparations forms a most important diagnostic step, for by it we are enabled to make a very early diagnosis and thereby institute most effective treatment. Probably no greater amount of work has been done than from the *diagnostic* standpoint—to this we refer later. Since the introduction of salvarsan as a *curative* measure many allied preparations have been introduced and their value tested, such as the various arsenical preparations and other metallic remedies.

It is to the *diagnostic* side of the question and particularly to the Wassermann test that our attention is especially called tonight. The Wassermann test is an exceedingly tedious, complicated procedure and requires the closest concentration for its proper performance. It is amusing to have a patient come into the laboratory and ask if he may wait outside for a few minutes for the result of the test, or to be accused of being exhorbitant in the charge of $5.00 for making a blood Wassermann. I shall not soon forget how in my fourth year in medicine (the Wassermann test was then in its infancy) a fellow student was doing some special work along this line and undertook to enlighten me in the principles of the reaction. I gained a remarkable respect for this student for his intelligence in understanding and for his ability in making me understand so complicated a reaction. In later years when I fully realized the finesse of technique required, to say nothing of the clear reasoning, and the conviction that lay behind it, I have had a most profound respect for Professor Wassermann. It is only the remarkable value of the test and the recognition of this that can account for the painstaking investigations along various phases of the subject. The many modifications of technique, the many different antigen preparations in use, are all representative of laborious effort in attempts to perfect this valuable aid to diagnosis and treatment. Because of the time and labor consumed in carrying out the Wassermann technique and the many modifications thereof a number of other shorter methods have been devised, the Kahn precipitation test probably being of these the most popular. We are slow however to give up the Wassermann test which has proven its value many times over, a fact which is attested to by the very rapid rise of Wassermann laboratories all over the country and to the prominent place which the study of this technique has in all schools for the training of technicians.

We are truly appreciative of all those who have worked so laboriously to give us an efficient laboratory guide and we feel that we cannot do without it. At the same time we are aware of the perplexing situations in which we are often placed because of some of the results obtained. Different laboratories sometimes give conflicting reports; sometimes the same laboratory will obtain different results on the same patient; varying reactions will be obtained from different antigens. Various explanations have been given for all of these and we shall not take time here to discuss them. It is the weakly positive reaction upon which we want to put a little emphasis tonight.

From the standpoint of the laboratorian the weakly positive reaction is one of the most difficult situations with which we have to deal. Some feel that the stigma of a positive Wassermann can't ever be erased though all evidence of the disease be cleared away. There are few of us who have not seen the hopeless agony of a sensitive patient when told of a positive result. Or, some may have had such an experience as this: A young man came into our office for the result on his Wassermann test. When told that it was negative he fell as if in a faint, his arms outstretched, his whole weight falling upon me in such fashion that aid had to be summoned in order to maintain equilibrium. It was many minutes before he could regain an intelligible sequence of conversation. I was lost in amazement at the effects produced by the news of a negative result. After a season I learned that these were expressions of joy. He had had a positive report from another laboratory. I am sure that none of us realize the heartaches that come from many of our reports, probably far worse than the disease. Because of this thought it was at one time our practice to disregard any reaction less than two plus and to place little value on a two plus reaction. We soon learned that this would not do, for on occasions we would be met with the remark, "It is very surprising to

obtain a negative result in this case, the patient shows decided evidence of syphilitic involvement." We have, when possible, explained circumstances to the physician in charge and asked his preference as to manner of reporting. Sometimes we simply report "slight reaction" without using the term "positive."

Since September, 1926, we have had in use three antigens and this has in a large measure solved much of our difficulty. When two of our antigens give positive results we have a much clearer conscience in reporting them. Especially here do we refer to the weakly positive reactions. In our experience these cannot be too lightly regarded—of so much value to the patient is the diagnosis especially in early infection. Some have expressed the opinion that weakly positive reactions are of value only in treated cases. With this we cannot agree. One case to the contrary may be named: initial lesion had existed one week at time blood was taken. The result: acetone insoluble antigen, negative. Cholesternized antigen, two-plus. Kolmer quantitative, one-plus—one-plus—one-plus—negative—negative. Another case of obscure diagnosis: acetone insoluble antigen, negative. Cholesternized antigen, one-plus. (Kolmer antigen not then in use). Therapeusis was instituted and the patient experienced early relief.

Below is tabulated some comparative results in the three antigens. The acetone insoluble and the cholesternized antigens are obtained from the New York State Department of Health. The Kolmer antigen is obtained directly from Dr. Kolmer. You will not be bored by a citation of these results but a few remarks may not be amiss. Sixty-one per cent of the positive reactions were positive in the three antigens used. 85% were positive in two of the antigens. A little more than two per cent of the whole number of examinations made were positive in the cholesternized antigen only. A little less than two per cent of the whole number were positive in the Kolmer antigen only. Where positive results are obtained in more than one antigen even though weakly positive, we feel that results cannot be disregarded. Even when obtained in one antigen only the patient should be instructed to have the test repeated at a later date. Our experience with the provocative Wassermann test has not been sufficient to express an opinion. This may offer a means of help in such cases though opinions differ as to its value.

Efforts are being made at standardization of the test both as to technique and as to interpretation of results, but while this is being done none of us is willing to suffer the loss of the aid given us, so we shall continue to bear with its shortcomings and to profit by its advantages.

LABORATORY DATA.

The three antigens have been in use in our laboratory since September, 1926.

Total number of examinations considered..... 961
Total number of negatives 691
Total number of positives..... 269
=28% of total number of examinations.
Positives in three antigens: 163 or 61% of all positives.
(The acetone insoluble antigen never alone gave a positive reaction.)
Positives in two (or more) antigens: 227 or 85% of all positives.
Positives in cholesterinized antigen only: 22.
Slightly more than 8% of all positives.
Slightly more than 2% of all examinations.
Positives in Kolmer only: 19.
Slightly more than 7% of all positives.
Slightly less than 2% of all examinations.

The following comparison of degree shows no marked difference between the two more sensitive antigens:

Cholesternized,	1-plus:	and	Kolmer,	4-plus	.....	6
"	2 "	"	"	4 "	.....	6
"	3 "	"	"	4 "	.....	7
"	4 "	"	"	4 "	.....	9
"	4 "	"	"	3 "	.....	4
"	4 "	"	"	2 "	.....	3
"	4 "	"	"	1 "	.....	6

DISCUSSION.

Dr. M. D. Thomas, Miami:

The discovery of the Wassermann reaction, I think, has done people more good than any other ever made. The Wassermann reaction is the test we want to have run or made on every patient who has an obscure sickness. They all will not give a 4-plus but they will give a one, two or three-plus. That means different stages of infection. A one-plus reaction will be discovered in an early, initial lesion, or a hereditary lesion in persons fifteen years or over. The two or one-plus may be discovered where the patient has been drinking and would have an active four-plus if the Wassermann had been run ten days before the spree. On the other hand, two or three days after the spree, the patient will give a negative result.

The Wassermann will sometimes resist all forms of treatment. I have in mind a patient whom I had given twenty-four doses of neosalvarsan, and she still had a four-plus Wassermann. She resisted all forms of treatment. She started back north in a Ford car with her husband. They broke down somewhere in Georgia, and she developed a malaria. In the fall she

came back, with a negative Wassermann. A malarial infection will often do that with a Wassermann reaction.

Often the only manifestation you will have of a positive Wassermann, one-plus, is a small gland, or a little discoloration of the skin—the skin will look spotted or dappled like the loins of a fat hog. You will often get a weakly positive Wassermann in patients who have very early infection.

In babies, born of actively specific parents, the reaction should be a four-plus, but will often be a one-plus.

I think the laboratories will do the men a great favor in reporting every one of those one-plus cases. As a rule the severity of the lesion will coincide with the Wassermann reaction.

Dr. W. H. Watters, Miami:

My experience has been very greatly at variance with that of Dr. Thomas. I have had, in the last fifteen years, the opportunity of observing some twenty-five or thirty thousand cases, and I am not able to say that the severity of the infection can be gauged by whether the Wassermann reaction is one, two, three or four-plus. I have frequently seen a comparatively mild case, or cases entirely overlooked, who showed a four-plus reaction. On the other hand, I have observed cases of a very severe infection on whom the Wassermann reaction was but one or two-plus.

I was very much interested in Dr. Youmans' paper, and I think the subject was given very admirably. The thing we need is the cooperation between the laboratory and the clinician. The laboratory alone should not make a diagnosis of syphilis, and the clinician alone should not make a diagnosis of syphilis, but it is the coordination of the two.

I have seen a distinctly positive four-plus reaction in cases I knew were not syphilitic, due to febrile conditions, or hepatic conditions.

I hope someone will contradict me, or otherwise, but I have not been able to gauge the severity of the disease by the Wassermann reaction. A one or two-plus Wassermann may mean nothing in itself.

Dr. B. Litterer, Miami:

I feel the Kolmer modification of the Wassermann is supreme in all tests, by far, and the best in addition to this has probably been the Kahn precipitation test which has helped a great deal in conjunction with the Kolmer. Kolmer advocates the use of this test—not to take the place of the Kolmer test, but as a wonderful adjunct, and there are often cases which probably will not show up positive in the Kolmer, which can be detected in some manner by the Kahn precipitation test, and the amount of errors and pitfalls to which one is liable from a standpoint of technical error is practically eliminated in the Kahn precipitation test.

Hecht Gradwohl advocates a test which, in my mind, has a great deal of advantage. Even in spite of a negative Kolmer and Kahn precipitation test, a Hecht Gradwohl test is run in which they use an uninactivated serum. This test, however, is rather too sensitive to be used in ordinary routine work. It is the negative phase of these tests which is of advantage. I feel in those obscure cases it is well to check them over with the Hecht Gradwohl.

As to cases of primary syphilis, that come with a chancre as a rule, the Wassermann is usually negative, and in this stage, the dark field is positive. It is the case in which the best results can be obtained by medication. In the past two or three years we found approximately forty cases in which the dark field has been positive, and with the administration of neosalvarsan, with treatment over a period of eight to ten months, in every instance the Wassermann and the Kahn has been negative at least two years after the first lesion was noticed. In those cases, there were probably two or three in the series which did not receive adequate treatment by falling into incompetent hands, and showed recurrence of a positive blood reaction.

I think in all cases in which there is a suspicious lesion, the dark field examination should be made, and active treatment over at least ten months' time should be instituted.

Dr. J. I. Thorne, Miami:

Two years ago last summer, I finished the urology course at the Graduate School of Medicine of the University of Pennsylvania, and of course was in close contact with such noted research workers as Kolmer, Schamberg, Thomas, Klauder and others. It is their opinion that any weakly positive reaction by the Kolmer improved test, barring technical errors, is an indication of syphilis, which merits careful consideration. The Kahn test is generally considered an excellent check.

Dr. Klauder demonstrated several cases in which serum obtained from primary ulcers gave a positive Wassermann reaction long before the

blood Wassermann became positive. The technical procedure is to wash a venereal ulcer gently with normal salt solution and if local applications have been made, the ulcer should be allowed to continue under normal salt compresses for some two or three days while dark field observations are being made. If the dark field does not reveal the diagnosis, then the ulcer may be moistened with denatured alcohol and allowed to stand a minute or two. The alcohol and serum are wiped off gently and as new serum oozes from the alcohol irritation, it is drawn up into a medicine dropper or the dropper can be used as a suction to draw the serum from the tissue. The serum is diluted with ten or fifteen drops of normal salt and sent to the laboratory. Dr. Klauder is now doing research work on desiccated serum from primary ulcers.

Since weakly positive Wassermann reactions may indicate poorly treated or not fully developed or latent cases, the history and further investigations along these lines are usually fruitful. Falsely positive reactions have been demonstrated in cases of diabetes melitus, jaundice and uremia. Such diseases that regularly give a positive reaction (yaws, leprosy, pulmonary tuberculosis, malaria, scarlet fever, etc.) fail under clinical observation. Late pregnancy has also given falsely positive reaction with cholestrol antigens. The latent syphilitic cases may be more clearly revealed with spinal fluid investigation. The Wassermann-fast cases may be cleared up with colloidal metals. Clearing your cases by the methods indicated reveal the true diagnosis and indicate future action.

Finally, no cases are to be considered cured until they have been able to deliver negative reactions for two years steadily, after the last treatment was given. No weakly positive case should be considered free from syphilis.

INTERNAL INJURIES

J. C. Richardson, M.D.,
West Palm Beach.

Internal injuries as a subject is entirely too large to incorporate in a paper. Volumes might be written and still there would be points not covered, but inasmuch as most internal injuries are evidenced by outward signs, such as gunshot wounds, stabs and the like, it is the occasional case of injury without any external evidence, or only slight signs that give us the most concern in diagnosis and the institution of treatment. It is to this type that I shall try to confine myself.

Intra-abdominal injuries, without external evidence, are usually caused by direct force. The injury incurred to the abdominal contents is not necessarily in proportion to the intensity of the force applied, as seemingly insignificant blows sometimes result in serious internal injuries. Likewise, severe blows may not cause any appreciable damage. The damage done to the viscera by the application of force is probably due to its being forced against the bony confines of the abdomen. This is brought to mind by the fact that most ruptures of the intestines occur in that portion which extends into, or approaches the pelvis. Injuries, however, can occur at a point removed from the point of application of force, by succussion or contre coup, if you please.

I wish to call your attention to a few cases that have been reported recently, also one from my own practice which will better illustrate some of the things that I wish to bring out.

Dr. Carl B. Davis, of Chicago, reported recently in the Surgical Clinics the following, which I shall make as brief as possible:

The patient, a man of thirty-five, with a history of a severe blow to the abdomen, felt momentary pain. After a short time, he attempted to return to work, but felt faint and sat down. In a quarter of an hour he began to suffer pain in the abdomen for which morphine was given. One hour after the injury, he was admitted to the hospital for observation, at which time, his pulse, respiration and temperature were normal. No pain and very little tenderness on deep pressure. Normal urine, white count, 7000; hemoglobin, 90. When seen two hours later, condition was the same and he stated he had gotten out of bed for voluntary urination. Two hours and a half later, patient had to be aroused to inquire into his condition, which was approximately the same; temperature 99, pulse 90, no increase in the leucocyte count. Seven hours later, patient complained of severe pain, temperature increased to 104, and pulse to 160, white count, 11000. Laparotomy was done and the small intestine was found torn completely across, with a marked fibrinous deposit covering the intestines.

The second patient was crushed between the motor house of a traveling crane and an overhead beam. He was persuaded to enter the hospital, with some difficulty. On admission, his temperature and pulse were normal, urine negative, and white cell count 18000, moderate ten-

derness and no rigidity. Because of the experience of the case just reported, which succumbed, an exploratory laparotomy was done and a rupture of the bowel, one inch long, was found. Patient made an uneventful recovery following operation.

The third, a case of my own, is a farmer who gave history of a fall into a ditch while returning from work in the fields. He received a rather severe laceration of the chin, for which condition I was called. Patient had a right inguinal hernia for which he wore a truss. At the time of the fall, the truss became displaced and his hernia came down. He stated there was some pain at the time, but that upon lying down, hernia had reduced itself and the pain had subsided. His attitude was to direct my attention entirely to the laceration of his chin. Pulse, respiration and temperature were normal. There was tenderness over the right inguinal region, but no rigidity. No amount of persuasion could make him go to the hospital for observation. About four hours later, patient was again seen, with no change in his condition. Seven hours from the first time I saw him, he was brought into the hospital with severe pain in the abdomen, extreme tenderness in the right inguinal region, marked rigidity, temperature 103, pulse 140. Laparotomy was done and rupture of the ileum demonstrated, with the usual fibrinous deposit which accompanies peritonitis.

The problems of diagnosis in the above type of cases usually do not include differentiation of shock and hemorrhage, because of the fact that most of these injuries are seen after some time has elapsed from their occurrence. However, it is well to remember the subnormal temperature, with rapid weak pulse, usual lack of appreciation of pain, and unaltered hemoglobin in shock, as against syncope, extreme thirst, collection of fluid in flanks, yawning, impairment of vision in late cases, and an enormous reduction of hemoglobin in hemorrhage.

The examination should include, besides the ordinary inspection and palpation, examination of a catheterized specimen of urine, digital examination of the rectum, a white, and a differential count and a hemoglobin estimation.

The symptoms of pain, tenderness, muscular rigidity, nausea and vomiting, increase in pulse rate, without the accompanying rise in temperature, are the usual signs looked for, but these may be slow in appearing, and hence, the need of repeated examinations at short intervals. All of these may not develop in any given case, but by careful watching of the patient, enough underlying distress will be found to indicate the proper procedure. Pain, muscular rigidity, tenderness, regardless of mass, bloody urine, or nausea and vomiting, are enough justification for exploratory laparotomy.

The treatment of such cases is expectant, only so long as the symptoms are slight and the patient rapidly recovering. The active treatment is of course, surgical, and depends entirely upon the part injured.

Without going into too much detail, I wish to call your attention to a real life-saving measure, namely, enterostomy. With internal injuries involving the hollow viscera, there is necessarily soiling of the peritoneum by their contents, and an accompanying peritonitis. These injuries necessitate resection, or simple repair, and as ileus is practically sure to interfere with the recovery of the patient, not only by accumulation of toxic material but by increasing tension on the suture lines of the newly made repair, it seems that the proper procedure is to guard against such a defeat at the time of repair. Simple enterostomy does not interfere with drainage, and I feel sure that less trouble would be encountered if this were made a routine procedure in all cases where there has been soiling of the peritoneum from intestinal contents.

The site of enterostomy depends largely upon that portion of the intestine involved. In the lower abdomen, there sometimes arises a condition known as duplex ileus with two points of obstruction, one in the sigmoid, and another in the terminal ileum. Often an enterocolostomy, with caecostomy, is advantageous in caring for this combined condition. In most cases an enterostomy in the lower ileum is sufficient, as the lower obstruction can most often be combatted by the usual methods, as the rectal tube, high enematas and pituitrin. Opening the jejunum rapidly dehydrates your patient, and there is a great loss of chlorides, which makes this site not one of choice, even if at a later date, it also has to be drained.

In injuries to the kidneys, the symptoms are, in a measure, proportionate to the amount of damage done. Intra-peritoneal rupture will rapidly show evidence of hemorrhage and would probably only be found during an exploratory laparotomy. Extra-peritoneal rupture, including the capsule, would show, besides blood in the urine, a fullness in the loins with dullness on

percussion. The pain, too, is not delayed, and if one bears in mind reflex pain along the course of the ureter, extending into the testicle, the seat of injury is not as vague as in other abdominal injuries.

Both of the above cases demand immediate operative measures. However, the mere presence of blood in the urine, unless profuse or definitely of bladder origin, is not indicative of serious damage and expectant treatment may be carried out. If definitely from the bladder, accompanied by other symptoms of rupture, explore the prevesical space and examine the bladder extra-peritoneally, before opening the abdomen.

In advocating early exploratory operation, I take fully into consideration the fact that on occasions nothing may be found, but the chagrin felt following such an incident is more than offset by the institution of timely treatment in instances of real injury.

In conclusion, I want to emphasize careful, painstaking examinations, repeated at frequent intervals. Immediate exploratory laparotomy in the presence of pain, tenderness, muscular rigidity, or, if in doubt, and in the presence of injury to hollow viscera, availing oneself of the advantages of enterostomy.

PRE- AND POST-NATAL CARE*

W. E. Van Landingham, M.D.,
West Palm Beach.

Both the profession and the laity are beginning to attach much importance to the pre-natal care of the parturient woman, but not enough importance is attached to the post-natal supervision.

That the necessity of pre-natal care is appreciated by women of the civilized countries is manifested by the fact that the tendency within the past ten years is for them to present themselves for care and advice during the early months of pregnancy. Prior to the past decade, the tendency was for the pregnant woman to present herself only during the last few weeks of her pregnant state, and in a great number of instances, the physician was not consulted until the beginning of labor.

As a result of scientific pre-natal care, the maternal mortality throughout the civilized world has markedly decreased, and there is a great diminution in the death rate from such conditions as the pernicious vomiting of pregnancy, sepsis and eclampsia.

In presenting herself for advice, the woman is actuated only by the thought of keeping herself in as good physical condition as possible throughout her period of gestation, in order that nothing having a deleterious effect upon the child may be done.

The physician having charge of the case should think further than the termination of the pregnancy, and his object should be to not only carry her to a safe termination for herself and child, but in addition, should endeavor to see that she returns to as near as possible her normal condition prior to her pregnancy.

A pregnant woman should be regarded by the physician as bearing an entirely altered physiology from the normal, since in the pregnant condition, metabolism is changed, and extra work is thrown upon the cardio-renal, digestive and nervous systems, as well as the different organs of the entire body.

In addition to the regular routine examination including the examination of the urine, recording the blood pressure, measurement of the pelvis, determination of the presentation and position of the child, if near term, a complete history should be taken. It should be noted the age, occupation, number of miscarriages, length of time married, and the history of any menstrual disorders, together with full information as to previous deliveries, whether normal, or abnormal.

The duration of the present pregnancy should be as accurately determined as possible, by fixing the date and character of the last menstrual flow.

The patient should be closely questioned as to any constitutional disturbances, such as vertigo, headache, disturbances of vision, constipation, appetite, vomiting, nervousness, inability to sleep, etc.

The patient should then be subjected to a very thorough physical examination, and the heart and lungs especially subjected to close consideration. The heart should be examined for any lesions and lack of compensation, and the lungs for any evidence of tuberculosis.

The breasts must be examined to determine if there be a lack of development of the glandular tissue, and also to determine the condition of the nipples for abnormalities such as fissures, retractions, etc.

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*Read before the Florida East Coast Medical Association, West Palm Beach, November 10, 1927.

It must not be forgotten that strict attention should be paid to the pelvic measurements, and if it is found that abnormalities are present which would interfere with the passage of a normal sized child through the bony canal, the husband should be acquainted with the fact.

One doing obstetrical work to any extent, should have a set of instructions printed, such as the list given in De Lee's text-book.

These instructions are concise and fully cover all points the patient need know. The patient appreciates this courtesy and she does not hesitate to tell her friends about it. As one of the leading obstetricians of New York says, it is the best form of ethical advertising one can get, and it results in many women engaging the one who issues these instructions, who would not otherwise know him.

Any woman presenting herself for examination before the end of the third month, should be examined closely for retroversion of the uterus, since this is one of the principal causes of miscarriage in the early months of pregnancy, on account of the retroverted gravid uterus catching under the promentory of the sacrum, resulting in the expulsion of the foetus.

Toxemia of pregnancy is always a grave condition, and therefore the urine should be frequently examined and the blood pressure determined at short intervals during the entire gestation. It frequently comes on without any prodromal symptoms, subjective in character.

As to the vomiting of pregnancy which is not controlled by the ordinary means, it is well to state that the dehydration of the tissues due to excessive hyperemesis may be combatted by proctoclysis. The ordinary hot Murphy drip of five per cent sodium bicarbonate solution, given not to exceed forty-five drops per minute, not only offsets the lack of body fluids but in many instances relieves the pernicious vomiting.

A pregnant woman having a constant systolic pressure higher than 130 m.m. should be regarded as being in danger of toxemia. In such a patient, the proteids should be cut down, especially during the latter months of pregnancy, regardless of the teaching that the proteid intake has nothing to do with this condition. Diet to be salt free.

The pyelitis, or pyelonephritis, of pregnancy is best treated by urethral catheterization and lavage of the kidneys with some of the germicidal agents commonly employed in the treatment of this condition. The establishment of free drainage has a tendency to relieve the urinary stasis and resultant infection. It is to be depended upon much more than the urinary antiseptics which are given internally. Pregnancy, even in the latter months, is not a contraindication for cystoscopy and ureteral catheterization.

Encourage the drinking of vast quantities of water, as this not only keeps the urine at a low specific gravity but also lessens the probability of pyelonephritis by free diuresis.

In case of eclampsia and convulsions, the plan of L. G. McNeile of Los Angeles should be instituted. He claims this reduces the mortality to about nine or ten per cent. This is a condensed resumé as follows:

1. Twenty c.c. of ten per cent magnesium sulphate intravenously as soon after the first convulsion as possible; repeated every hour until the convulsions are controlled.

2. Blood pressure to be taken every hour after convulsions are controlled, and if blood pressure begins to rise, nearing its height at time of convulsions, magnesium sulphate repeated, also repeated if convulsions recur.

3. Patients who are comatose or very restless in a semi-comatose delirium and whose blood pressure is falling, should receive chloral hydrate, grs. 20, and sodium bromide, grs. 60, by rectum.

4. Utmost quiet to be observed and nurse to be constantly with patient until latter is out of coma.

5. Oxygen inhalations to be given after each convulsion until breathing is normal.

6. All patients to be prepared for delivery as soon as they are quiet enough to do so.

7. If patient is in labor, use nitrous oxide gas for pain.

8. If in the second stage of labor and proper progress is not being made, low forceps extraction for version, with the consent of attending obstetrician.

9. Termination of pregnancy is indicated only when symptoms persistently recur and do not respond to treatment.

10. Cesarean section is only used for absolutely obstetric conditions.

The majority of us were taught that the toxemia following, or associated with eclampsia, quickly disappeared after the end of pregnancy, and that no permanent damage was done, but this view is not tenable in the light of more recent investigations.

Bunzel reports a series of 133 cases of tox-

emia of pregnancy, occurring at the Sloane Maternity Hospital, of New York, in which a complete follow-up of these cases had been instituted. Persistent hypertension resulted in 37.6 per cent; 39.8 per cent had albuminuria of a certain degree; 54.2 per cent showed renal insufficiency by the phthalein test; and of those who had retinal changes during pregnancy, 31 per cent had persistence of them. These findings collectively gave a percentage of 41.4 per cent with signs of permanent cardio-vascular-renal disturbances following the toxemia of pregnancy.

Relative to the advisability of future pregnancies, it is the consensus of opinion that where there are permanent damages done the cardio-vascular-renal systems, conception should not be permitted to occur again.

The post-natal care of woman has not been given the same consideration that the pre-natal has by the profession, with the result that many women become chronic sufferers from this neglect.

During the months of pregnancy, the abdominal muscles are subjected to a great strain from the constant tension, and at the termination of labor are flacid and atonic. They should be stimulated to contraction by daily massage and graduated exercises, such as extension and flexion of the thighs on the abdomen, and raising the body from the bed, with the limbs fully extended. Muscular movements of the body have the tendency to hasten involution of the uterus.

Unless the abdominal muscles are afforded artificial support by the wearing of an abdominal binder, there is a greater probability of a general visceroptosis and prolapse of the pelvic and abdominal organs.

This support should be worn for at least three months following delivery, in order to allow the flabby and sagging abdominal muscles time to regain their normal tone.

Watson claims that the greater majority of women who consult the gynecologists, do so because of the pain and backache resulting from relaxed abdominal walls and enteroptosis following pregnancy, and says that this may be absolutely prevented in the greater number of cases by the wearing of adequate abdominal supports, subsequent to delivery.

As a rule, very little attention is paid to the position of the uterus following the puerperium, although it is a well-known fact that retroflexion, or retroversion are common complications following this state. After allowing sufficient time to intervene for the uterus to become involuted, an examination should be made to determine the position of the organ. It is relatively an easy thing to correct a displacement at this time, and to hold it in place with tampons or pessaries, until the uterine ligaments are contracted sufficiently to hold it in correct position.

It is stated that a lochial discharge persisting for a longer time than usual, is indicative of uterine displacement and should never be attributed to subinvolution of the uterus, or to retention of membrane.

It is not thought worth while to more than mention repair of the perineum, immediately following delivery, as none could be so negligent as to overlook so obvious condition.

It is held that lacerations of the cervix are due to: (1) delivery of the child by forceps, or version before complete dilatation; and (2) the very precipitate, tumultous labor, lasting perhaps two or three hours, in the primipara.

In passing, it may be well to state that there is a reprehensible custom current amongst certain physicians of giving pituitrin before complete dilatation takes place. This is responsible for extensive lacerations of the cervix, and any physician guilty of giving it in order to avoid waiting for normal dilatation to take place, should never be called upon to attend a woman in delivery. Such custom shows an utter disregard for the welfare of the woman, and is responsible for semi-invalidism in many women.

Cervical lacerations, unrepaired, generally cause leucorrhea, more or less profuse in character, associated with lower abdominal pain and backache. Such chronic inflammation attendant upon these old unrepaired lacerations has a tendency to become malignant later on in life.

In closing, it is emphasized that as much attention should be given women relative to the post-natal condition as is given them in the pre-natal state, for by so doing, we are able to save many of them life-long suffering.

INSTRUCTIONS FOR PROSPECTIVE MOTHERS.

1. Dress warmly. Avoid circular constriction of any part of the body. As soon as child's motion is felt, abandon corsets; wear a maternity waist and a breast support.

2. Take plenty of mild exercise in the open air and sunlight, especially walking, stopping short of fatigue. Avoid violent exercise such as golf, tennis, swimming, and long trolley or automobile

rides, etc. Traveling is permitted only when absolutely necessary.

3. Take no extremely hot or cold baths. Tepid baths are best. In last four weeks before delivery, no tub baths; use shower or sponge baths. Take no douches unless ordered and especially in the last month, allow nothing to touch the internal genitalia.

4. Intercourse should be avoided, if possible. Always restricted and absolutely forbidden the first three months, and the last six weeks, and the week of each month when the menstrual period would normally have occurred.

5. There must be at least one bowel movement every day.

6. Unless otherwise directed, eat usual amount of food. Restrict the meats, or their equivalents, poultry, fish and eggs to four ounces a day, and these only four days a week. Eat plenty of fruit, green vegetables, especially spinach. Drink freely of water and milk, taking at least one pint of milk, or buttermilk daily. Make your fluid intake at least eight glasses per day. (This intake of milk is important because milk contains more available calcium, or lime salts, than any other food, and the growing child, or foetus, needs a large supply of lime salts. The green vegetables, especially spinach, furnish phosphorus which the child needs in order to adequately use the lime salts). No alcoholics. During the last six weeks, reduce the amount of fats in eating.

7. Keep the breasts free from pressure. Bathe the nipples once a week with tincture of green soap, carefully washing them and drying them afterwards. Annoint them daily with albolene.

8. Once a week, measure the amount of urine passed during the entire twenty-four hours. The amount should be three pints, or more.

9. Report either by telephone or office call when you are troubled with nausea, vomiting, headache, swelling of the feet or eyelids, or any other abnormality of your health. Report to me also any decrease in the amount of urine you are passing, and also if there is any hemorrhage from any part of the body.

10. Sleep on alternate sides. During the last month, knead the abdomen very gently for a few minutes to relieve the baby from a cramped position.

11. Make weekly visits to the office throughout your pregnancy.

12. When labor begins, or if the waters break, or blood-stained mucus appears, notify me and go to the hospital.

13. Six weeks after delivery, come to the office for examination.

14. One year after baby is born, return with baby for "follow-up" examination.

A PLEA FOR THE MORE CONSERVATIVE AND INTELLIGENT TREATMENT OF GONORRHEA*

MILTON M. COPLAN, M.D.,
and
ROY J. HOLMES, M.D.,
Miami.

Dr. Henry J. Farbach of Louisville, Ky., in an article on "General Observations on Gonorrhea," published in 1924, places the blame for all present day indiscriminate management of gonorrheal infections on the esteemed Dr. Valentine of New York City. To quote him, "A number of years ago Dr. Valentine advocated a plan of treating gonorrhea which has done more than anything else that ever happened to retard therapeutic progress in the management of this disease. He reported hundreds of cases of acute gonorrhea cured, on an average, within 14 days, by irrigations with potassium permanganate solution. Until the last few years this method was rewritten in every text-book on urology that I have ever seen." From this last statement we presume that Dr. Farbach meant to infer that Dr. Valentine so successfully inoculated his theory into the profession at large that until recently it was accepted as an uncontestable truism.

Granting that Dr. Valentine's practice was a bad one and that it has had its ill effect, we cannot see that he is alone the culprit who has hindered the therapeutic progress of the disease. Alongside of his must be placed the names of those men who have advocated countless other pet theories equally as viscious, principle among them being the gonococci vaccine fanatics. And these few remarks lead us to this emphatic accusation: every man within the medical profession who accepts the responsibility of administering to one unfortunately infected with the gonococcus, yet who has no accurate knowledge of the anatomy and physiology of the parts involved, the mode of invasion, life cycle of the gonococcus, and pathology produced, is just as guilty of re-

*Read before the meeting of the Florida East Coast Medical Association, West Palm Beach, Nov. 10, 1927.

tarding the progress of scientific medicine and harming society as those men whose particular theories have brought them into the limelight. In a concise, yet sufficiently detailed manner, to permit complete handling of the subject, we shall attempt to bring before you those facts which have caused us to issue a plea for more conservative treatment of gonorrheal urethritis in the male. Our opinions are neither individual nor original; we have, however, coupled our personal observations and deductions with the researches and clinical results of many authorities, thereby giving us a sound basis for every statement that shall follow in the progress of this discussion. At this point we must digress momentarily to voice appreciation of the magnificent contributions to the subject of gonorrhea by Dr. P. S. Pelouze of the Department of Urology, University of Pennsylvania. For many years he has devoted his entire thought to this one big problem confronting medical science, until today his views are no longer hypothetical; they are unmistakably correct and practical.

We shall omit a description of both the gross and minute anatomy, as well as physiology, of the genital tract since we have only limited time but shall bend every effort toward a discussion that will not leave you "grasping in the dark." For a complete account of these forementioned phases we refer you to any modern text-book on urology and venereal diseases. In order to permit clear understanding of why we urge conservative therapeutics, we must speak for a moment of the mode of tissue invasion of the causative organism and picture the course of the disease. First then we explode the ancient incubation period theory. Investigation in recent years has proven that the gonococcus attains a luxuriant growth in 48 to 72 hours. Why the urethral discharge does not appear at this time will be shown in the progress of our discussion. Once the organism has entered the meatus it does not require three or four days to find its way to the fossa navicularis as we had supposed, for surely it would not survive the flow of urine against which it must travel. On the other hand it can be definitely stated that it travels rapidly toward its natural habitat, the columnar mucus membrane of the urethra. It is not the nature of the bacteria to remain on the surface, so what really occurs is that the gonococci from the moment they reach their site of election begin to find their way not into the individual cells but into the intercellular spaces of the mucosa; even into the submucosa and at times into the corpus spongiosum. Here they begin their actual life cycle, the result of which is an inflammatory reaction that varies in different individuals. The direct result of this irritant is capillary engorgement with consequent marked escape of serum and an outpour of polymorphonuclear leucocytes. The current of flow is toward the urethral lumen and hence towards the meatus—it is nature's best means of combating infection. It has been conclusively shown that phagacytosis and leucocytosis occur almost solely on the surface and that they have no bacteriocidal effect on the gonococcus; further that they aid in arresting the diseases only by their action in removing a few gonococci from the lumen. The tissue diarrhea IS of value. The irritant in turn produces exfoliation of the surface columnar cells and they are replaced by squamus epithelia, a less nutritious food for the surface gonococci.

Contrary to former belief it is not a toxic material produced by the living gonococcus that is the irritant. It is simply a toxin produced by the self-destruction or autolysis of the organism together with disintegration of the cell. This toxin is commonly and appropriately termed gonotoxin. The gonotoxin, or endotoxin if you please, stimulates the tissues to the formation of anti-substances, a process that is very slow in the beginning. And it is this anti-substance, along with bacteriolysis, that plays the great part in the cure. Experimental workers call our attention to the fact that the stages of the life cycle of the organism are shortened or prolonged by the slightest influences. And, just as we have pictured the invasion of the urethral mucus membrane, so does invasion occur in the various glands and associated structures of the genital tract; with, of course, the slight variations occasioned by the tissue composition of the particular part.

We arrive then at our first conclusions:

1. That a broad knowledge of the anatomy and physiology of the genital tract is essential to a proper understanding of the behavior of the disease, and that a clear conception of the mode of invasion of the gonococcus, the life cycle of the germ, and pathology produced will facilitate a proper appreciation of the course of the infection.

2. That the incubation period therefore covers the periods of transit, tissue penetration, growth

of the organism, and autolysis of the germ, plus the time elapsing between toxin liberation and suppurative responses to the endotoxin.

3. That only insofar as we work to increase the physiological reactions of the tissues to the irritant shall we curtail the course of the infection.

4. And that only as we favor a more rapid cell disintegration and bacteriolysis shall we aid in shortening the course of an infection which Dr. E. L. Keyes ably states is "in the adult male a self-limited venereal disease."

What does all of this mean to us, you ask? And the explanation is simply that the rate of elimination of the infection is directly dependent on free surface drainage and absence of trauma; most favorable then when surface drainage is at its best and trauma at a minimum. Here we are forced to remind you that the genital tract must be free of obstruction from the meatus back to the very end ramifications of prostatic acini. Free drainage primarily encourages tissue diarrhea, which results in clean, healthy tissue and clean healthy tissue is poor food for gonococci. Free drainage promotes cell disintegration and bacteriolysis and these factors govern respectively diminution of the bacterial growth and liberation of the endotoxin which is directly responsible for anti-substance formation.

The effects of trauma need but little elaboration. The sensible deduction is that traumatized tissue is incapable of properly carrying out physiological function; including excretory power or withstanding the attack of invading bacteria which seek food. Also that sound cell infiltration and subsequent scar tissue formation are the end results of trauma and scar tissue is certainly prohibitive to free tissue drainage.

It is very evident, therefore, that irrigations of whatever the antiseptic are contraindicated in any acute case of gonorrhea; first, because they carry organisms occupying the surface mucosa backward in the urethra to non-infected tissue which, thanks alone to God's wisdom in placing a douche can—the bladder behind the male urethra—has remained free of invasion; second, most irrigations employed are of such a concentration that they destroy the surface epithelium, leaving it a mass of debris to obstruct the more minute urethral follicles and thus hinder drainage of that all-important tissue, the submucosa; or through their astringent action produce the same effect. In fact such antiseptics, if administered even by hand injection, are equally abusive. If used during the reparative stage they wash away the newly deposited replacement epithelia as rapidly as nature lays it down.

And so it is with instrumentation in the early stages of the disease. Its greatest harm is trauma and its only good is a psychic effect on the patient. The edema alone that results is sufficient to block the ordinary urethra, not to mention the scar tissue deposited in the areas of open abrasion. We shall relegate vaccine therapy to the discard by simply stating that so far as we are able to discern its only value lies in stimulating leucocytosis, which in itself plays but little part in combating the infection and which is sufficiently cared for by the infection per se. Further that vaccines only add to the labor of a body tissue that is making every effort to form anti-substances to a definite endotoxin in that they force the body to form anti-bodies for a dozen irrevelant types of cocci. It has been our observation that diathermy offers nothing but trouble. Possibly some of you have had more favorable experience with it.

How then is a case of specific urethritis to be treated conservatively? When the patient first presents himself take the time to outline for him the nature of the infection and its behavior. Explain to him that you will be only an aid to his getting well; that you will show him how to best take care of himself. Impress upon him that there are no antiseptics sufficiently active to destroy the gonococci by direct contact without also destroying the tissue involved and inhibit its physiology. Let it be known that the drug you employ is a mild one, the prime purpose of which is to keep the surface of the canal clean. Such early instruction will prevent many patients from seeking the various "Knoxem" preparations dispensed by your corner drug stores. In other words, obtain the confidence and cooperation of that class of patients who, due to the gouging of thousands of quacks that have invaded the field of venereal practice, come to you skeptical from the outset. Above all do not promise an early cure—gonorrheal urethritis does not get well in three or four weeks. Have the patient understand that his own body resistance, tissue reaction to the drugs you employ, and the care he takes of himself will control the time element; three factors that do not lend themselves readily to prognostication. See your patient daily until he has safely passed the acute

stage of the infection. We employ only one injection daily and that only 3 or 4 c.c. of a very mild antiseptic such as neo-silvol or silvol. Not until the discharge is practically gone is a patient given an injection to administer to himself twice daily. At this time there is very little danger of his doing harm. It is wise to see your patient at least every other day until you are reasonably certain that he has mastered the knack of using his syringe. Just as long as the infection confines itself to the anterior urethra so should the treatment be confined to this area. Do not encourage trouble by "going after" the prostate gland, etc., until there is every evidence to believe the urethra has become free of infection. Never allow a patient to inject into the posterior urethra. If it becomes necessary to treat this sector have him come to you for this care.

Diet plays but little part—so we allow our patients to eat what they desire. It is forcibly impressed, however, that they must abstain from alcohol in any form.

Antiseptics by oral administration are no value, but free imbibition of water is, and we specify that at least one glass of water per hour be consumed. The effect of this is evident and needs no emphasis here.

And as you bend your efforts to avoid complications, instruct your patient to avoid the things that lead to them, such as sexual excitement, too strenuous work and allowing the bladder to become distended with urine.

When you have every reason to believe that the urethra is possibly well then moderate instrumentation has a place. Gently pass a boulé into the urethra to determine if there are any strictures or granular areas formed. If so a series of sounds skillfully passed is practical. Next examine the prostate gland; should you find pus, and in most cases you will, it is advisable to institute a program of very mild prostatic massages at four to six day intervals.

Under such conservative treatment there are very few early cures; we do not claim to get them. In fact we believe that our cases are under treatment for a longer period of time than the text-book average. But we do claim that our results are more satisfactory from the very onset of the case. From the beginning the patient usually worries us with such questions as, "Doctor, why do I not have the great pain that I have always been told is associated with a case of gonorrhea?" or this statement, "I do not understand how this can be the gonorrhea for it does not pain in the least, and when I had it before it almost killed me." And further we are confronted with very few troublesome complications such as are a source of grief to the physician and a real menace to the future health of the patient. In the past two years we have treated an average of 20 cases of gonorrhea daily, many of whom, of course, found their way to us from other physicians, and in some of whom complications were already established. But of those cases that came to us from the very onset of their infection we can report only 12 cases of epididymitis, two cases of prostatic abscess and one case of acute gonorrheal arthritis. Does this compare favorably to the text-book and clinic reports that 20 to 30% of all gonorrhoeal infections are complicated by acute epididymitis? Such data are not presented boastfully but simply to show you that the ratio of complications is in direct proportion to the mildness or severity of the treatment.

CESAREAN SECTION—WITH A REVIEW OF TWENTY-ONE CASES*

THOS. W. HUTSON, M.D.,
and
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Miami.

In reviewing the literature, we see this subject discussed more in the past year than ever before. The discussion is based mainly on the two questions: (1) When is a Cesarean section justifiable? (2) How or where shall the incision be made?

We feel that a Cesarean section is indicated and justified in any condition where we will be able, in our judgment, to deliver by section with more safety to the mother, both as to her immediate condition and to her future health. The health and life of the mother merits our special consideration for only exceptionally does the performance of the operation per section add to the foetal risk.

Pelvic contraction is unquestionably the most frequent indication for Cesarean section and is demanded in absolute contraction regardless of how long the patient has been in labor. In relative contraction of the pelvis we are guided by the general condition of the patient, position,

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condition of the child and relation of the size of the child and the pelvis as revealed by careful X-ray study. In measuring our patients we always take both the measurements at the brim and the outlet.

Eclampsia and pre-eclamptic toxemia are conditions which are always open for discussion as to the advisability for this operation. As the laity become better educated as to the value of prenatal care we believe that eclampsia will be eliminated. We have not had the experience with the medical or expectant treatment of eclampsia and believe that the eclamptic should be delivered as early as possible, if she be a primipara, the cervix not dilated, by immediate section, this followed by active elimination. Fortunately we have had only one eclamptic, this one being referred after having had several convulsions.

Marked pre-eclamptic toxemia, we feel, should be treated expectantly for twenty-four to forty-eight hours; if they show improvement this should be kept up and delivered in normal manner; however, if they show no improvement, we feel they should be delivered immediately, primipara especially, by Cesarean section.

Premature separation of normally situated placenta we feel should warrant this operation unless the cervix is dilated or easily dilatable and measurement ample. We have had three in the past two years all associated with marked pre-eclamptic toxemia. One of these, a multipara, was delivered by rapid dilation and version and made one of the stormiest recoveries we have ever seen an obstetrical patient make. We saw a similar case in consultation shortly afterward that had been delivered by a family physician, that went into collapse about three hours after delivery. Although there was no excessive loss of blood, this patient presented the picture of exsanguination and died while we were obtaining blood for transfusion. Two other cases seen later were referred to us in extreme shock, the babies were dead. Rapid immediate sections were done, followed by blood transfusions; they both made smooth uneventful recovery. Upon opening the abdomen in both cases, there was an extravasation of bloody fluid in the peritoneal cavity, the uterus was mottled with an extravasation of blood and, upon section, showed marked separation of muscle fibers.

Central placenta previa, we believe, should, if recognized early, always be sectioned. The cardiac cases we see in obstetrics usually, if under careful prenatal care, can be delivered normally if the presentation and position is normal. We have sectioned one cardiac case. This was one referred to us, a primipara breech presentation and membranes ruptured, not in active labor. There was slight decompensation, which at intervals had been more marked throughout her pregnancy.

Obstructive tumors, atresia of vagina, distocia following previous pelvic operations: We have not had any of these conditions in our series. Some obstetricians consider certain malpositions of the foetus as indications for this operation. These, however, usually can be delivered by vagina. As to the patients who have had previous sections. It is true that certain men deliver them normally, but there is always a certain risk due to rupture of the scar and we believe this risk is greater than that of Cesarean section at the time of election.

To summarize, I quote Lull of Jefferson Medical College, "It is not the absolute indications for this operation which lead the obstetrician astray, but mainly because we have allowed a certain amount of elasticity to creep into our teaching." This, I believe, is perfectly justifiable in conscientious hands, and results, if not in the actual saving of lives, the placing back in the homes of women who are physically capable of taking care of their newborn children and not chronic invalids from mutilation with obstetric forceps.

In those cases which we have had under our care throughout their pregnancy and have decided to section we usually post them a few days before the expected date of confinement; however, in some border-line cases we give a test of labor. In some cases the decision to operate is made after prolonged labor and this, it is agreed by all, tends to increase the morbidity and mortality rate.

In preparing a patient the abdomen and external genitalia are shaved, cleaned and painted with iodine. In addition we paint the vagina of all patients whether they have been previously examined or not with either 3½% iodine or 5% mercurochrome. The bowels are emptied by enema, the bladder by catheterization. The patients do not receive a preliminary hypodermic of morphine and atropine. On two occasions this has been given through error and the resuscitation of the child has been prolonged. We use gas induction followed by ether anesthesia.

Our incision is made from just above the symphysis to the left of the umbilicus and slightly above it. The abdomen opened in the usual manner, one hand explores the abdomen, sweeping around the uterus in search of adhesions, if they be present and we feel that they will interfere in any way they are clamped, cut and tied. Next we place a large moist pack around the uterus, starting at the bladder, going around one side, packing the intestine off above and behind, and back down the opposite side. The pregnant uterus is usually in dextra rotation and should be rotated in a straight line before being incised. Next we make a stab incision well up on the fundus of the uterus in the midline. A finger is thrust through this incision to see if we are in the uterine cavity. Then the incision is enlarged downward, using an ordinary pair of bandage scissors. The child is grasped by the feet or buttocks and extracted. The assistant then with the right hand brings the uterus up in the abdomen wound, injects 1 c.c. of obstetrical pituitrin into the wall of the uterus, places the left hand back of the uterus and grasps the round ligaments and tubes, forcing the thumb and fingers well down on the lower uterine segment below the incision and by pressure controls the hemorrhage. The cord is cut, the placenta and membranes are removed, the cavity sponged out and examined for any remaining membranes.

We use as our first suture in closing a No. 2-40 Day chromic catgut doubled. The ends are tied together and the first stitch is looped through. The first layer of stitches approximates the uterine muscles close to the endometrium, but does not include the endometrium; this is a continuous stitch drawn snug but not tight as this is muscle we are sewing. The sutures are anchored well at each end of the incision. Next we put in two similar stitches approximating the muscle beneath the peritoneal covering. The assistant then releases the pressure on the uterine and cervical arteries and the visceral peritoneum is closed over the incision with a lock stitch burying the knots at both ends. Usually there is no bleeding following these three lines of suture; however, if there be any bleeding we use a modification of the Philadelphia Lying-in Hospital mattress suture, using No. 1 plain gut on a small needle.

The pack is then removed from the abdomen, the posterior cul-de-sac sponged out and the abdomen closed in layers. In those cases that have had vaginal examinations we start in immediately to treat as if they were infected. They are put in Fowler's position, ice cap to abdomen and proctoclysis of 5% glucose and soda given. If there is much post-operative vomiting the stomachs are washed with two quarts of 5% bicarbonate of soda. All cases have the usual opiates for pain and the usual post-operative care. Pituitrin or ergot is administered as indicated. We have not found it necessary to pack any of these cases. We prefer this operation to the low cervical. We have done it after patients have been in labor twenty-four hours, have had several examinations and one case that had had an induction of labor. We have done only one low cervical section, several years ago and not included in this series; the incision became infected and drained from around the bladder and cellular tissue at the base of the broad ligaments so that we reoperated twice believing that a sponge had been left in. We believe that the peritoneum if not too greatly insulted will take care of infections as well or better than the vascular cellular structures beneath the bladder. Frankly, infected cases with temperature, foul discharge, etc., if sectioned at all, we feel should have a Porro section, amputation at cervix. We have seen one such case in consultation, not in this series, that made an uneventful recovery.

In our series we have had one case of phlebitis that made a perfect recovery. Once, infection of abdominal incision that drained 28 days and recovered and one post-operative embolus that died.

In our series we have had ten sections for contracted pelvis, four for pre-eclamptic toxemia, two for premature separation of placenta, two for previous operation, one of which was the fourth section, one for placenta previa, one for cardiac decompensation and one for high transverse arrest.

We lost one mother out of the twenty-four cases or a mortality of 4.1%, this death being due to an embolus. We lost no babies that were at term and alive at time of operation. Four stillborns were delivered. Twins in the placenta previa case and the two premature separation of placenta. The average period the patients were in the hospital was 14 days. The longest stay 25 days, the shortest 11 days. All patients were examined at the end of six weeks and showed uterus with normal involution and no evidence of infection or complications.

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CHOLECYSTOGRAPHY

The advancement of the diagnosis of gall-bladder disease has been marked since the general use of tetraiodophenolphthalein of soda. It requires a most careful technique and minute attention to details. It is a strong point of evidence when carefully used but must be taken with the clinical picture and clinical evidence in the case and not relied upon as an absolutely positive and negative type of evidence.

Those who use the intravenous method have little interest in the oral one. The oral method is, however, of great value but probably requires more care and attention to details. Many good liquid preparations of the gall-bladder dye are on the market. It is unwise to allow the patient more than a very moderate amount of food within two or three hours of the time the dye is taken. This food should be those articles quickly digested. They must absolutely avoid food and the odors of food until the films are made. Really, only water should be allowed. Laxatives or a laxative action of the dye will not interfere with obtaining a well-filled gall-bladder.

It must be remembered that the gall-bladder is a freely movable organ and may fall underneath the shadow of the vertebra or under the bony ilium. Appropriate pads will often bring into view a well-filled gall-bladder that was thought previously to be empty.

The reaction to the intake of food and the manner of emptying of the gall-bladder is the principal information obtained. Hence its reaction to a marked fat meal will give the greatest index as to its contractility and emptying ability.

Gall stones may be shown of the non-opaque type or others may be made denser by the dye, but such evidence must be carefuly checked by many films before and after eating and in numerous positions, before being accepted as absolute evidence.

When in doubt as to any detail repeat the examination or check it with the intravenous method. Frequent use and minute attention to details are necessary to the accurate use of the method.

STATE NEWS ITEMS

Dr. Walter C. Jones, president of the Dade County Medical Society, read an interesting paper on "Hernia" before the Palm Beach Academy of Medicine on Wednesday evening, June 28th.

* * *

Dr. L. E. Roper of Hollywood is taking post-graduate work in the New York Post-Graduate Medical School. He expects to return home about the 15th of August.

* * *

The regular monthly meeting of the Sarasota County Medical Society was held July 9th at the Sarasota Hospital, Sarasota. Dr. J. R. Scully, city health officer, read, by invitation, a paper discussing tularemia. Dr. J. E. Harris read a paper on "Ringworm." Following the scientific program, refreshments were served.

* * *

The DeSoto-Hardee-Highlands County Medical Society held its monthly meeting at Bowling Green July 10th. Dr. R. L. Cline of Lakeland read a paper on "Sinus Infection."

* * *

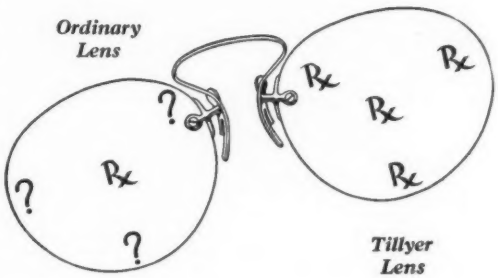
Dr. B. L. Arms of Jacksonville, State Health Officer, and Dr. D. E. Denney of the Public Health Service, recently visited Leesburg where they conferred with the City Health Officer, Dr. S. C. Wood.

* * *

Dr. A. R. Beyer of Tampa recently made a trip to New York by aeroplane.

(*Continued on page* 106)

to OCULISTS:



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County Society	Secretary	MEETINGS Date	Time	Place	Luncheon?	Dues Paid.
Alachua	J. L. Summerlin, M.D., Gainesville.	2nd Tuesday	12:00 Noon	White House	Yes.	81%
Bay	D. M. Adams, M.D., Panama City.					100%
Bradford	Seeber King, M.D., Lake Butler.					67%
Brevard	I. K. Hicks, M.D., Melbourne.	Varies		Varies		79%
Broward	Leigh F. Robinson, M.D., Ft. Lauderdale.	2nd Tuesday	8:00 P.M.	Chamber of Commerce	No.	88%
Columbia.....	P. C. Farnell, M.D., Lake City.	1st Monday.	7:30 P.M.	Chamber of Commerce	No.	100%
Dade	R. M. Harris, M.D., Miami.	1st Friday	8:30 P.M.	Miami City Club	Occasionally.	72%
DeSoto-Hardee-Highlands ...	C. H. Kirkpatrick, M.D., Arcadia.		8:00 P.M.	Varies	No.	94%
Duval	Kenneth A. Morris, M.D., Jacksonville.	1st Tuesday	8:15 P.M.	Duval County Hospital	No.	96%
Escambia	J. M. Hoffman, M.D., Pensacola.	1st Tuesday	8:00 P.M.	Board of Health Building	No.	85%
Hamilton	R. A. Barnett, M.D., White Springs.					
Hillsboro	Frank T. Barker, M.D., Tampa.	1st and 3rd Tuesdays	8:00 P.M.	City Hall	No.	87%
Jackson	C. H. Harrison, M.D., Cottondale.	2nd Tuesday	3:00 P.M.	Marianna	No.	100%
Lake	W. L. Ashton, M.D., Umatilla.	1st Thursday	12:30 P.M.	Eustis	Yes.	100%
Lee	H. Quillian Jones, M.D., Ft. Myers.	3rd Friday	7:30 P.M.	Lee Memorial Hospital	No.	53%
Leon-Gadsden-Liberty-Wakulla-Jefferson.....	F. Clifton Moor, M.D., Tallahassee.	Quarterly	3:00 P.M.	Varies	Yes.	96%
Madison	Geo. O. Davis, M.D., Madison.					100%
Manatee	J. M. Davis, M.D., Bradenton.	1st and 3rd Tues. Oct. to May; 2nd Tues. May to Oct.	7:00 P.M.	Dixie Grande Hotel	Yes.	100%
Marion	J. L. Chalker, M.D., Ocala.	3rd Thursday	12:30 P.M.	Harrington Hotel	Yes.	86%
Monroe	G. R. Plummer, M.D., Key West.	1st Sunday	9:00 P.M.	Varies	Yes.	86%
Orange	J. R. Chappell, M.D., Orlando.	3rd Wednesday	8:30 P.M.	Varies	No.	80%
Palm Beach ...	S. W. Fleming, M.D., W. Palm Beach.	2nd Monday	8:00 P.M.	Court House	No.	80%
Pasco-Hernando-Citrus.....	T. F. Jackson, M.D., Dade City.	2nd Tuesday	8:00 P.M.	Varies	Yes.	100%
Pinellas	O. O. Feaster, M.D., St. Petersburg.	Every other Friday	8:00 P.M.	Fla. Art School	No.	100%
Polk	Geo. C. Overstreet, M.D., Lakeland.	2nd Wednesday in Feb., Apr., June, Aug., Oct., Dec.	1:00 P.M.	Lakeland	Yes.	75%
Putnam	E. W. Warren, M.D., Palatka.	2nd Thursday	7:00 P.M.	James Hotel, Palatka	Yes.	92%
St. Johns	J. M. Irwin M.D., St. Augustine.	3rd Tuesday	8:30 P.M.	Varies	Yes.	100%
St. Lucie-Okeechobee-Indian River-Martin.....	C. L. Davis, M.D., Okeechobee.					83%
Sarasota	F. Metzger, M.D., Sarasota.	2nd Tuesday	8:30 P.M.	Varies	Occasionally.	93%
Seminole	J. T. Denton, M.D., Sanford.	2nd Friday	8:00 P.M.	City Hospital		93%
Sumter	W. E. Mitchell, M.D., Coleman.	2nd Tuesday		Varies	No.	80%
Suwannee	W. C. White, M.D., Live Oak.					100%
Taylor	R. J. Greene, M.D., Perry.	Last Thursday	12:15 P.M.	Eldorado Cafe	Yes.	100%
Volusia	R. L. Miller, M.D., Daytona Beach.	2nd Tuesday	7:30 P.M.	Varies	Yes.	92%
Walton-[illegible]	A. G. Williams, M.D., [illegible]	3rd Thursday	8:00 P.M.	Varies	Occasionally.	100%

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St. Lucie- Okeech
Volusia
Walton- Okaloo

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Columbia.....	P. C. Farnell, M.D., Lake City.	1st Monday.	7:30 P.M.	Chamber of Commerce	No.	100%
Dade	R. M. Harris, M.D., Miami.	1st Friday	8:30 P.M.	Miami City Club	Occasionally.	72%
DeSoto-Hardee-Highlands ...	C. H. Kirkpatrick, M.D., Arcadia.		8:00 P.M.	Varies	No.	94%
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Orange	J. R. Chappell, M.D., Orlando.	3rd Wednesday	8:30 P.M.	Varies	No.	80%
Palm Beach ...	S. W. Fleming, M.D., W. Palm Beach.	2nd Monday	8:00 P.M.	Court House	No.	80%
Pasco-Hernando-Citrus.....	T. F. Jackson, M.D., Dade City.	2nd Tuesday	8:00 P.M.	Varies	Yes.	100%
Pinellas	O. O. Feaster, M.D., St. Petersburg.	Every other Friday	8:00 P.M.	Fla. Art School	No.	100%
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St. Johns	J. M. Irwin M.D., St. Augustine.	3rd Tuesday	8:30 P.M.	Varies	Yes.	100%
St. Lucie-Okeechobee-	C. L. Davis, M.D.,					83%
Volusia	R. L. Miller, M.D., Daytona Beach.	2nd Tuesday	7:30 P.M.	Varies	Yes.	92%
Walton-Okaloosa	A. G. Williams, M.D., Lakewood.	3rd Thursday	8:00 P.M.	Varies	Occasionally.	100%

NOTE—(Secretaries: Please submit information to complete the above schedule.)

At the last monthly meeting of the Palm Beach County Medical Society, Dr. W. W. George read a paper on "Paroxysmal Tachycardia."

* * *

Dr. Clyde Brady of Leesburg died July 1st at his home from an overdose of a drug. Dr. Brady served as councillor during the past year, for the sixteenth district.

* * *

Dr. L. J. Arnold of Lake City is spending a few weeks in North Carolina.

* * *

The following members of the Florida Medical Association attended the annual meeting of the American Medical Association held in Minneapolis recently:

Chadbourne A. Andrews ..... Tampa
B. L. Arms ..... Jacksonville
Ernest Bostleman ..... Ft. Myers
Mary Freeman ..... Perrine
Robert F. Godard ..... Quincy
Roscoe H. Knowlton ..... St. Petersburg
Frederick F. Kumm ..... St. Petersburg
E. Sterling Nichol ..... Miami
Bascom H. Palmer ..... Miami
S. D. Rice ..... Gainesville
W. T. Simpson ..... Winter Haven
Walton C. Touchton ..... Avon Park
Walter D. Webb ..... St. Augustine
Carl A. Williams ..... St. Petersburg

* * *

Dr. John E. Boyd of Jacksonville, chairman of the Committee on Hospitals and Medical Education of the state association, at the request of the staff, made an official inspection of the Alachua County Hospital on July 18th. That evening at the regular monthly meeting of the Alachua County Medical Society, Dr. Boyd and Dr. W. McL. Shaw of Jacksonville gave a lantern slide demonstration of "Surgical Problems of the Stomach and Duodenum."

* * *

The Suwannee River Medical Association held its regular monthly meeting at the Blanche Hotel, Lake City. About twenty members were present. Dr. Frederick J. Waas, president of the Florida Medical Association, discussed "Organized Medicine and the Function of the County Medical Society" in a most interesting manner. Following this, Dr. Shaler Richardson read a paper on "Some Practical Ophthalmological Points." A course dinner was served and a most enjoyable time had by all.

* * *

Dr. L. T. Furlow, who for the past year has practiced at Brooksville, is now located at Leesburg.

(*Continued on page* 108)

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Physicians are securing satisfactory results from the use of this new Milk Modifier, which is more than a mere sugar.

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augments the nutritive value of cow's milk by the addition of these valuable elements derived from choice barley and wheat:

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Dr. S. D. Rice of Gainesville recently underwent a nasal operation at the St. Luke's Hospital, Jacksonville.

* * *

Dr. J. M. Anderson of Sears was a recent visitor to Jacksonville.

* * *

Dr. J. Knox Simpson of Jacksonville is spending his vacation in Alabama.

* * *

Dr. T. H. Bates of Lake City expects to attend the Southern Pediatric Seminar at Saluda during the month of August.

* * *

At its July meeting, the Columbia County Medical Society had as its guests Doctors L. W. Holloway and W. McL. Shaw of Jacksonville, who presented an interesting discussion of the "Thymic Syndrome," with a lantern slide demonstration. Dr. Shaw also presented a case report, with films, of "Spontaneous Pneumothorax in a Child."

* * *

Dr. George L. Bates of Daytona Beach is spending his vacation in Morrisville, Vt. Dr. Bates expects to return about October 1st.

* * *

Dr. H. A. Peyton of Jacksonville has recently returned from a motor trip to Washington, D. C.

* * *

The Duval County Medical Society at a recent meeting voted to place a copy of Hygeia in every school library in Duval County. This is a worthy move on the part of the society in promulgating health education and should be adopted by other county medical societies over the state.

* * *

Dr. J. H. Dyer of Lake City is spending his vacation in his old home in Tennessee.

* * *

Dr. Stewart G. Thompson, business manager for the Journal and statistician for the State Board of Health, Jacksonville, is making an official visit to the state bureaus of vital statistics in North Carolina, South Carolina, Georgia, and possibly Alabama. The scope of the Florida Bureau has been considerably enlarged since the centralization of marriage and divorce records in this state.

* * *

Dr. F. K. Herpel of West Palm Beach is spending his vacation in Europe and plans to attend the Second International Congress of Radiology in Stockholm in August.

(*Continued on page* 110)

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Lewellys F. Barker, M.D., President
Baltimore, Maryland
John B. Deaver, M.D., President-Elect
Philadelphia, Pennsylvania
George W. Crile, M.D., Cleveland, Ohio
Chairman of the Program Committee

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At Atlanta, Georgia

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All Members of County Societies, State Associations and the A. M. A. are cordially invited to attend.

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At an executive meeting of the State Board of Medical Examiners held in Jacksonville June 11th, the license of Dr. Joseph Napoleon Tessier was revoked on the grounds that he made a false affidavit to the Board in November, 1927. Dr. Tessier's license from Massachusetts was revoked December 16, 1926.

* * *

The Leon-Gadsden-Liberty-Wakulla-Jefferson County Medical Society held its quarterly meeting in Monticello July 12th at 3.30 p. m. Papers were presented by Drs. Robert McIver and Shaler Richardson of Jacksonville, Henry Palmer, Tallahassee; A. L. Blalock, Madison, and J. Q. Folmar of Chattahoochee. Dr. McIver and Dr. Richardson were invited guests. Following the scientific program, Dr. J. B. Brinson arranged a delightful swimming party. A supper was served in the evening at the home of Dr. and Mrs. Brinson which was followed by numerous impromptu speeches. The society and guests gave Mrs. Brinson a rising vote of thanks for her hospitality.

* * *

The following physicians passed the last examination given by the State Board of Medical Examiners in Jacksonville, held in June:

Andrews, Edwin H. ..... Cedar Key
Aragon, Adolfo E. de .....
Balley, S. Marion ..... Tallahassee
Bell, Kenneth R. ..... Emory, Ga.
Boone, J. W. ..... Kansas City, Mo.
Brink, F. A. ..... Jacksonville
Brunson, Joseph Evans ..... Lakeland
Connon, A. B. ..... La Salle, Ill.
Curtis, Walker Lewis ..... College Park, Ga.
Deedera, C. ..... Winter Haven
Doctor, William R. ..... Miami
Eigle, Edwin G. ..... Arcadia
Elliston, Leroy Bertram ..... La Salle, Ill.
Elliston, Robert L. ..... La Salle, Ill.
Ford, Robert B. ..... Tuskegee, Ala.
Foucher, Kenneth R. ..... Augusta, Ga.
Guerra, Julio J. ..... Tampa
Jackson, Alfred J. ..... Orlando
Jenkins, Hughes Brantley ..... Macon, Ga.
Jones, William Wardlaw ..... Atlanta, Ga.
Koger, E. B. ..... Miami
Leach, Miford Arthur ..... Orlando
LeBreton, Prescott ..... Buffalo, N. Y.
Merchant, H. M. ..... Gainesville
Mock, A. E. ..... Pensacola
Newton, Robley D. ..... Ft. Myers
Nolan, T. L. ..... Marietta, Ga.
Norris, Johnnie Andrew, Jr. ..... Piedmont, S. C.
Pender, M. S. ..... Sneads
Quasser, A. B. ..... Portsmouth, Ohio.
Rawlings, C. L. ..... New Harmony, Ind.
Russell, R. E. ..... Atlanta, Ga.
Rutter, Joseph Howard ..... Daytona Beach
Scheffel, Carl ..... Miami
Shoemaker, Samuel Anise ..... Bluffton, Ind.
Smith, Joseph A. ..... Chicago, Ill.
Stebbins, Alvin L. ..... Palmetto
Stormont, Riley M. ..... Webb City, Mo.
Strange, James L. ..... Jacksonville
White, Alvyn W. ..... Pensacola
Williams, John L. ..... Tallahassee
Womack, David R. ..... Tampa
Wright, Nelson A., Jr. ..... Miami
Young, Wilburn Cogdell ..... Tampa

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